First Copy

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

Vol. 11. No. 1489. Entered as second-class matter Aug. 27, 1925, Post Office, N. Y., N. Y., Under Act of March 3, 1879 NEW YORK, FRIDAY, JUNE 12, 1931 5 Cents. $12 Per Year

De Soto Announces New De Luxe Body Line on '8' And New Sedan Body on '6'

Price Range on "8" Line Remains the Same as That Which Covered Standard Bodies

DETROIT, June 11.—The De Soto Motor Corporation today announces a new de luxe body line on its eight cylinder line, and a new de luxe sedan body added to its six cylinder units. The eight cylinder de luxe models are offered at the same prices which covered the standard bodies, the range beginning at $965 and rising to $1,065. The de luxe six sedan is priced at $825, slightly above the price of the standard.

The eight cylinder de luxe line comprises sedan, coupe, coupe with rumble seat, convertible coupe and roadster. A new radiator cap, portraying Hernando De Soto, is to be used on all these new models. Fenders and sheet metal parts are painted to match the body color.

Curtains are hung at the quarter windows and the rear window. The side walls are covered with upholstering cloth. A new type of arm rest is used on the back seat, and smoking kits are conveniently located. Rear quarter lights are included in the sedan models. Risers have been added to the doors and windshield headers. Chrome plated door sills are used.

Side cowl ventilators have been fitted with screens. The models are upholstered in Bedford cord, with silk mohair optional at a slightly advanced cost.

On the new de luxe sedan model there are a number of exterior and interior changes and improvements. Fenders and sheet-metal parts are now painted to match the body color. The side walls are covered with upholstery cloth. Assist cords and robe rail have been added. Front seat risers covered with body cloth are employed. Garnish molding aprons have been added to the door and window trim. Chromium plate has been liberally used.

MAY CONSUMPTION OF CRUDE RUBBER BEST SINCE 1930

New York, June 11.—Consumption of crude rubber by manufacturers in the United States for the month of May was the highest for any month since May a year ago, and is estimated to be 37,817 long tons, an increase of 13.5 per cent. over the April consumption of 33,321 long tons, according to statistics released by the Rubber Manufacturers' Association today.

Imports of crude rubber for May amounted to 31,720 long tons, the lowest figure since August, 1928, and compares with 46,648 long tons for April and 40,745 long tons for May, 1930.

For the first time since September, 1929, stocks on hand in the United States showed a decrease from the previous month's figure. Total domestic stocks of crude rubber on hand and in transit overland on May 31 are estimated at 220,799 long tons, a decrease of 3.3 per cent. under April, although 56.2 per cent. over May, 1930.

Crude rubber afloat for United States ports on May 31 is estimated at 73,564 long tons, as against 56,700 long tons on April 30 and 68,168 long tons on May 31, 1930.

Late News Flashes

Detroit, June 11.—Graham-Paige reports a gain of 90 per cent. in exports shipments in May, as compared with April, the largest month it has had since May, 1930. June is expected to show continued activity.

* * *

Washington, June 11.—Using parts largely imported from the United States and the expert advice of American automobile engineers, China recently completed the manufacture of her first automobile truck, the Department of Commerce is advised. The truck was made at the government owned assembly plant at Mukden, and has been given the name of "Feingtien," the old name of Mukden.

* * *

Indianapolis, June 11.—L. L. Harr of L. L. Harr & Co. has been elected a director of the Stutz Motor Car Company of America.

* * *

Toronto, Ont., June 11.—F. A. Seiberling, president of Seiberling Rubber Company, speaking before National Association of Purchasing Agents here today, said that not a single dollar profit in an annual business of $1,000,000,000 has been made by the rubber industry in the United States in ten years.

CANADIAN CAR FINANCING SHOWS GAINS FOR APRIL

MONTREAL, Quebec, June 11.—The figures for automobile financing compiled by the Dominion Bureau of Statistics show a rise in April as compared with March this year, and indicate a falling off in financing as compared with April, 1930. The per cent. of change is 26.8.

The total number of cars financed was 14,460 in April, 1931; 8,012 in March, 1931, and 17,880 in April, 1930. The amount of financing was $6,218,273 in April, 1931; $3,543,176 in March, 1931 and $8,495,647 in April, 1930.

New cars financed were 5,552 in April, 1931; 2,884 in March, 1931, and 8,069 in April, 1930. Used cars financed were 8,908 in April, 1931; 5,128 in March, 1931, and 9,811 in April, 1930.

Financing of new cars amounted to $3,354,395 in April, 1931; $1,889,774 in March, 1931, and $4,225,160 in April, 1930. Financing of used cars amounted to $2,863,878 in April, 1931; $1,653,402 in March, 1931 and $4,270,487 in April, 1930.

HUDSON-ESSEX SALES FOR JUNE SHOW GAIN

Detroit, June 11.—Hudson and Essex sales for week ended June 7 showed increase of fifty cars over like week 1930, increase being attributed to wider distribution of cars equipped with selective free wheeling, according to William J. McAneeny, president and general manager.

This is the first time this year Hudson and Essex have reported an increase, compared with a year ago.

MICHIGAN ADOPTS SAFETY GLASS LAW

Lansing, Mich., June 11.—Gov. Brucker has signed the Wilson bill which requires shatterproof glass in all vehicles used to carry passengers for hire after January 1, 1932, and in all private automobiles after January 1, 1934.

TODAY

Sparks from Detroit.....Page 2
Ford dealer keeps salesmen off showroom floor.....Page 3
Massillon, O., Chevrolet sales on par with 1930.....Page 3
Editorial: "How Long?".....Page 4
Differential discussion.....Page 4
Indianapolis Dodge dealers' sales up 73 per cent. in May....Page 5
Engineering news.....Page 11
Delivering oils and gasoline profitably.....Page 12

REFERENCE TABLES
Cumulative April new commercial car registrations.....Pages 6, 7
Cumulative May new commercial car registrations.....Page 7
Major specifications and mechanical details of new commercial cars.....Pages 8, 9, 10

N.A.C.C. Members Discuss Present Situation and Future Outlook

NEW YORK, June 11.—Interesting sidelights on the past, present and future of the automotive industry are contained in the comments made by leading manufacturers at the recent members' meeting of the National Chamber of Commerce at 366 Madison Ave. As usual, meeting this year was open only to members of the chamber and a summary of the discussions was made public for the first time today.

The salient feature of all these comments is the fact that while leaders, generally, are conservative in the forecasts for the future, and that they evidently prefer to quash any false booms at this time, there is an undercurrent of optimism based on the constant accumulation of potential orders, due to the fact that cars and trucks are being worn out more rapidly than they are being replaced.

No immediate upturn is expected, but the comments reveal that the leaders are of the opinion that the bottom of the depression has been reached. Some executives look forward to improvement in the latter part of this year, and others called attention to the fact that depressions in the past usually have been halted during the summer months.

Other subjects commented upon were: Used car problems, freight rates, exports, advantages and disadvantages of territorial protection and time contracts, wage maintenance with unemployment insurance for the automotive industry, what changes should be made in warranty contracts and tax questions with which the industry is threatened.

The summary of discussions is as follows:—

The General Business Outlook

Alfred H. Swayne, vice-president of General Motors Corporation, said that it would be unwise to attempt to predict when a more definite improvement in business conditions would occur.

Recalling that the decline in building activity came in October, 1928, some time in advance of the

(Continued on Page 2)

SEIBERLING SAYS TIRE MAKING IS NOW PROFITLESS

Toronto, June 11.—Rubber manufacture has become the least profitable of all American industries, F. A. Seiberling, president of the Seiberling Rubber Company, declared during the course of an address at yesterday's session of the National Association of Purchasing Agents.

"For the past ten years it has done an average annual business of $1,000,000,000 and has not taken a clean dollar out in the form of profits." Mr. Seiberling, to illustrate the unfavorable position of the tire industry contrasted its earnings with those of the automobile manufacturing trade, with which it is closely allied.

He stated that in 1928 the automotive industry stood first in point of earnings in a list of fifty-seven industries; that of rubber manufacturing stood fifty-fifth.

During 1929 the result was not much better for rubber and only slightly less favorable for automobiles. The positions in that year were third and fifty-third, respectively. The automotive industry did not do so well in 1930, however, dropping to thirteenth place in a list of fifty industries, while rubber manufacturing showed no profits at all, being somewhere

(Continued on Page 12)

Pottery Trade Gains Aid Ohio Valley Truck Sales

EAST LIVERPOOL, O., June 11.—Unmistakable signs of an upturn in public demand for commercial cars are evident in the upper Ohio valley, with considerable activity centered in East Liverpool, largest city in this area. Gradual return to normal of the pottery industry, in which 90 per cent. of the valley's population is engaged, is said to be largely responsible for the increased sales in recent weeks.

Truck sales the month of April attained a new high level for more than a year, when a total of thirty-five new units were delivered in Columbiana county, as compared to twenty new truck sales during the month of May. While May sales fell below those of the previous month, dealers declare there is no indication of waning interest in commercial cars and that there should be equally as many sales the remainder of the summer.

During April, twenty new Ford units were delivered in the county and eight Chevrolet. The remainder of the business for that month was divided among Studebaker, Dodge, Graham, and White. In May, there were ten Chevrolet trucks delivered in the county, seven Fords, two Willys and one Dodge.

Considering industrial conditions through the upper Ohio valley, in April and May commercial car business was considered excellent. Like many other industrial centers in eastern Ohio, truck dealers employed caution in closing commercial business this spring and have turned down a large volume of prospective sales when there was the least question involved as to whether the buyer could meet the obligation.

(Continued on Page 5)

Dealers Use Various Means to Increase Shop Work

See Page 5

N. A. C. C. Members Discuss Problems Facing Industry

(Continued from Page 1)

general depression, he pointed out the present up-curve in building activity as a hopeful sign that the return to normalcy is not far off. The history of depressions in the United States for the last hundred years, he declared, has shown that improvement has invariably come during the summer months with good crops. So far the agricultural prospects in most of the sections of the United States are good, he said. He expressed the opinion that security prices appeared to be at or close to bottom. He also reported the fact that a very conservative organization of English capital is returning to the commodity market as a sign that experts believe that commodity prices are at their low point.

Motor Outlook for the Last Half of 1931

Roy H. Faulkner, president of Auburn Automobile Company, was unable to attend because of illness, but sent a message to members expressing his belief that the construction work being done to improve sales and production methods will result in a fair amount of business to dealers and manufacturers who approach the situation with courage and understanding. He quoted a recent communication from Col. Ayres of Cleveland to the effect that "the most important single fact about the automobile industry at the present time is that motor vehicles are being worn out faster than they are being produced. Consumption is greater than production. A great shortage of cars is in the making. The demand is accumulating but it is not yet acute. It seems doubtful if it will become acute during the second and third quarters of this year although it is possible that it may during the last quarter."

Asked to supplement Mr. Faulkner's views, N. E. McDarby, sales manager of Auburn Automobile Company, gave his opinion that the market for motor cars would continue through September although a decline for June already appears inevitable.

Speaking from his long association with the industry, W. C. Durant, president of Durant Motors, Inc., recalled some of his statements of seventeen years ago with respect to the problem of used cars noting that the situation had been growing worse. He was hopeful for some more constructive moves to better this problem of the industry.

Mr. Durant also spoke in opposition to dealers repurchase agreements, declaring that these have constituted handicaps which have contributed to the failure of many automobile merchants, and have exerted a demoralizing influence upon the sales division of the industry.

Finance companies, he declared, should be required to assume these risks instead of permitting the burden to fall upon the dealers.

Finance company methods of merchandising repossessed cars were also criticized by Mr. Durant. He cited instances of finance companies exhibiting repossessed vehicles by spectacular methods in the same neighborhood where new car dealers' showrooms were located. This practice, he said, could not be expected to have a stimulating influence on the sale of new cars.

Freight Schedules—Should They Be Revised to Compare With New Rate Schedules?

Charles D. Hastings, chairman of the board, Hupp Motor Car Corporation, reviewed the condition of the railroad industry and described the possibible effects of the new rail rate schedules for automobile classifications.

The railroads' new rates, he stated must be regarded as an experiment undertaken by the carriers to regain lost traffic. These reductions may be expected to be only temporary unless they produce a greater volume of traffic. Mr. Hastings also reminded the members of the fundamental improvement of rail transportation to the motor industry. He declared that motor manufacturers should be very sympathetic with the attempts of the carriers to relieve themselves of current difficulties. He also suggested that manufacturers scrutinize prices charged by their dealers and discourage any tendency to over charge for freight.

Alfred P. Sloan, Jr., president, General Motors Corporation and chairman of the National Automobile Chamber of Commerce Trade Promotion Committee, reported that the desire of the public for new automobiles had not diminished with the depression. Vehicles are being worn out, creating a vast potential market. Improvement of merchandising methods he advanced as the industry's greatest need. Natural and spontaneous interest in automobiles during the development of the industry has resulted, he said, in minimizing to a certain extent the importance of pursuing basic business principles in selling the industry's products.

He declared that the industry's present problem is to correct this situation by educating its dealers and enabling them to operate profitably. He cited the used car as being at once one of the industry's greatest assets and one of its greatest liabilities. The used car is an asset because of the low priced transportation that it offers and the effect that it has in enlarging the potential market of new car buyers. Introduction of accounting systems for dealers and education of motor merchandisers will ultimately stabilize sales division of the industry, he said.

Export Problems and Outlook for Trade Overseas

Robert C. Graham, vice-president of Graham-Paige Motors Corporation, and chairman of the National Automobile Chamber of Commerce Export Committee, reported that the current depression is our principal barrier to export sales. Tariffs have been increased on automotive imports in twenty-eight countries, some being reprisals to the Hawley-Smoot tariff and others resulting from economic conditions within the countries affected. He believed it unreasonable to expect a foreign market for our products unless we patronize markets abroad, and urged the need for a "live-and-let-live" policy in official Washington. Mr. Graham declared that there was need for improving the financial conditions and the export stocks of our dealers. His remarks were indorsed by B. C. Budd, export manager of Packard Motor Car Company, and Roy D. Chapin, chairman of the board of Hudson Motor Car Company. Mr. Chapin reviewed the export outlook for the industry and described the danger of discriminatory tactics which are being manifested in certain countries.

He also cited the preferential treatment British manufacturers are seeking and obtaining in colonies and provinces of the empire.

Railroads' Opposition to Highway Transportation

A. J. Brosseau, president of Mack Trucks, Inc., and vice-president of the National Automobile Chamber of Commerce, told of the hostile attitude of railroad interests toward all phases of highway transportation, as has been manifested by their petitions to legislatures for increased taxation and more burdensome regulation of motor vehicles. Educational methods were recommended by Mr. Brosseau as a means of counteracting the prejudices which the railroads seek to establish.

Advantages and Disadvantages of Teritorial Protection and Time Contracts

Territorial protection, in the opinion of R. H. Grant, vice-president of General Motors Corporation and chairman of the chamber's sales managers' committee, may be necessary if the cultivation of prospects takes a long time and sales are infrequent. Open territory, he thought advisable when conditions are the reverse. For higher priced cars, protected territory appeared to have some merit, with open territory much more practical for cars in the low priced field.

Under open territory, Mr. Grant believed unfair competition should be prevented by throwing circles around the large cities. Where there is more than one dealer within a city, he did not think it so necessary to separate their territory.

Mr. Grant protected territory so far as it was carried out reasonably well with fairness to both dealer and manufacturer.

With respect to time contracts, Mr. Grant thought there could be no objection provided dealers contracted to take a stipulated number of cars monthly on regular shipping schedules. He holds that there must be mutuality of interests between factories and dealers, and could see no objection to time contracts if dealers would guarantee to take quotas.

Factories and dealers seem to fare best when there is a mutuality of interest, not necessarily enforced by legal contracts, but when of benefit to both sides.

Mr. Grant maintained that highest cancellations of dealers should only be made by highest sales officials after they have fully reviewed the circumstances.

Mr. Grant made the broad assertion that our merchandising is far from efficient, declaring that factories have not progressed in that direction to the extent that they have in designing and in production.

One main reason for this was the fact that during the past two years selling has been rated the main problem of the industry.

He made two specific recommendations for factories:

1. To provide an accounting system to find out the dealers who are wild traders, and for the good of the industry, ask them to change or give up the account.

2. Don't saddle trouble on the dealer when you overproduce.

Mr. Grant declared against trade allowances. He said that the main problem for the dealer today is how to get more profit from new cars than he loses on used car allowances. If we don't stabilize the dealer's used car business he will have great difficulty in making profits.

Joseph E. Fields, president of Chrysler Sales Corporation, recommended the appointment of a committee to consider this question. He expressed the opinion that warranty features and service policies should not be permitted to become factors in sales competition.

According to Mr. Fields, a tendency to supplement the standard ninety-day warranty agreement on passenger cars with a clause placing a mileage limitation on new vehicles has been observed among several manufacturers. A uniform warranty policy, he declared, is essential if competition within the industry is to be kept free from consideration of service policies.

Wage Maintenance With Unemployment Insurance for the Automobile Industry

A. R. Erskine, president of Studebaker Corporation, referred to current editorial matter as indicating the reaction being accorded the subject of unemployment insurance.

He also described briefly several forms of unemployment insurance which have been attempted by different organizations. He also expressed himself in opposition to reduction in wages and announced that in his own organization hourly wage averages were the highest that they have been since 1928 with two exceptions. The administration of the Unemployment Benefit Plan by the manufacturers of Rochester, N. Y., was described by Mr. Erskine. He also referred to similar programs sponsored by individual companies, such as the General Electric Company.

Do Increased Motor Taxes Threaten Sales?

Roy D. Chapin, chairman of the board, Hudson Motor Car Company, reviewed the attitude of the industry with respect to the taxation of motor vehicles relating that there had never been any objection to such taxes if they were used exclusively in the development of highways. He reported that there is now some evidence that excessive taxation of motorists is becoming an obstacle to the use and sale of automobiles.

This year, he reported increases in gasoline taxes have been effective in ten states.

He substantiated his argument that excessive motor vehicle taxes injure the sale of motor vehicles by citing statistics from the United States Bureau of Public Roads on 1930 motor vehicle tax receipts and registrations as showing that in nine of the ten high tax states there had been substantial decreases in registrations while increases were reported in nine of the ten low tax states.

SPARKS *from* DETROIT

Tickle, Tickle

* * *

John E. Grimm, Jr., Returns

* * *

Among the Advertising Men

* * *

Chris Sinsabaugh—Detroit Editor

THAT "tickler" ad that is running in Automotive Daily News this week, announcing the approaching debut of the "fastest car in America for the money," the identity of which is still a mystery, certainly has stirred 'em up in Detroit. The column conductor's good right arm is sore from picking up the telephone receiver, answering calls regarding the advertisement. Wild guesses are being made and it is evident that next Tuesday's A. D. N. is going to be very much in demand.

The writer has not been let into the secret, but somehow or other, the questioners seem inclined to doubt this and we fancy we hear "Oh, yeah" sarcastically uttered when the curiosity cannot be satisfied. Anyhow, we are of the opinion that this "tickler" campaign has accomplished its purpose—it has made 'em curious.

* * *

FORCE of habit greatly embarrassed Fred Starcke of the Detroit office of the National Automobile Chamber of Commerce the other day. The compiler of the monthly estimate of production issued by the N. A. C. C. came into the General Motors cafeteria, where ye scribe was gobbling a quick one; walked to a side table and took off his coat. Then he flushed up, hurriedly put on the coat and sat down to eat, at the same time trying to look at ease. When we kidded him a bit he confessed he had forgotten where he was and had followed his office habit of taking off his coat.

* * *

"DADDY, did you know our doctor was the first man to get a license to drive an automobile in Japan and that his first car was a Hudson?" was the surprise sprung on Chester Abbott, director of merchandising of Hudson-Essex, by one of his two young daughters the other day. Father didn't know it and that's how the interesting story came out.

Dr. G. M. Laning of Detroit can well be called the Commodore Perry of motoring in Japan, for he has the documents to prove that he was the first automobile owner to receive a license to operate a car in the Flowery Kingdom. He was born in Japan of American parents, was educated in this country and returned to Japan as a medical missionary. Located in Osaka, in 1911, he ordered a Hudson touring car shipped from America. It created a furor, being the only one in the city—even Tokio only had six automobiles. So the government decided that cars must be registered and Dr. Laning had the honor of being the first to receive a license.

* * *

WE'RE welcoming back next week John E. Grimm, Jr., who, for some little time, has been vice-president and director of sales of the General Motors Radio Corporation at Dayton. Grimm has been assigned by Vice-President R. H. Grant to the post of assistant director of advertising, sales section of G. M., under D.-P. Brothers. A similar title has been given to W. W. Lewis, formerly assistant general sales manager of Cadillac-La Salle and who for some time past has been attached to the staff of Mr. Brothers.

Before he went to Dayton Johnny Grimm was advertising manager of Chevrolet, a job he held down for five years. No one will be named to succeed him at Dayton, for they have in Charles T. Lawson a general sales manager who will carry on.

* * *

ANOTHER bit of gossip: Rex Glasson, whose autobiography shows that at one time he was advertising manager of Gray Motors, which produced a low-priced car some ten years back, and who recently was Dodge sales promotion manager, is now vice-president of National Advertisers in the Reid Building, this city. Glasson, of course, will specialize in automotive and aeroplane accounts.

* * *

THE Advertising Federation of America has an uncanny way of picking out the best talent when it seeks speakers for its conventions, which explains why R. K. White, Chevrolet advertising manager, has been asked to talk on "Spot Broadcasting" at the New York meeting next Tuesday. White learned his stuff through handling "Chevrolet Chronicles," said to be the most extensive broadcast now on the air. He will tell his fellows all about his one year of experience at this sort of work.

Ford Dealer Keeps Salesmen Off Showroom Floor

Hollywood, Cal., Concern, However, Increases Their Commissions and Finds New Plan Working Satisfactorily

HIGHER commissions for salesmen and virtually no floor time has been put into effect by Saurwein & Laverty, Ford dealers, 710 North Highland Ave., Hollywood, Cal.

"We feel that in our particular case at least salesmen should be outside drumming up business instead of standing around on the floor waiting for a possible prospective buyer to come in the door," explained Charles Laverty, in discussing the firm's new method of paying and employing salesmen.

"Our particular set-up, with not only Mr. Saurwein and myself at the store throughout the day but the presence of the sales manager as well, makes it unnecessary for a salesman to be on the floor, so far as the firm's interests are concerned. In the second place, we feel that any one of the three of us is much better able to handle the drop-in trade. When a customer comes in the door, the salesman, being on a commission, has only one objective, to make a sale. All other activities of the firm are sharply subordinated to that one purpose, whether the customer is a prospect or not.

"Besides, many of these drop-in customers are personal friends of myself from my previous work in my Ford service shop, and I feel that I can contact them much better than a strange salesman. I take pride in showing them through the shop, and can approach them on new cars and close such customers much more easily than can a salesman. And, after all, we are in business to make a maximum number of sales."

In consideration of the fact, the salesmen have practically no floor time; the firm pays them a 7 per cent. commission instead of the customary 5 per cent. after trade-ins are deducted. The territory served by the dealership is zoned, and each salesman has his own territory, for which he is responsible.

"Salesmen are agreeable to this method of working them and paying them," continued Mr. Laverty. "We do give them a little floor time by giving them evenings and Sundays when they cannot advantageously be employed making cold turkey calls in the territory."

So far the firm has not gone into the red on used cars, and it has been in business about a year now. This, according to Mr. Laverty, is because the firm will not make a deal that it cannot make money on. It refuses to trade wild just to make another sale and then trust that subsequent deals will offset the loss.

"We never have more than a dozen cars on hand in the used-car department," said Mr. Laverty. "We keep a prospect list of customers who are in the market for used cars, together with their specific needs. As soon as a trade-in comes into the department the sales manager goes over his prospect file and ascertains what prospects, if any, are in the market for such a car. Then he calls them up. This, too, keeps our used-car stock at a minimum."

FORD NAMES DONNELLY SEATTLE PLANT MANAGER

Seattle, Wash., June 11.—Formal announcement has just been made of appointment of J. C. Donnelly as manager of the Ford Motor Company plant in Seattle.

Donnelly has served as temporary manager since the resignation of R. W. Hinea, now a Ford dealer in the University district, Seattle. Eleven years ago he was a hotel clerk in Spokane. His rise is another example of opportunities in this country for capable men.

About January 1 the Ford assembly plant will be removed to the new location on the Duwamish Waterway, where a $3,000,000 plant is being built.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

F. A. MERRICK POINTS TO PROGRESS MADE IN DISTRIBUTION COSTS

Atlantic City, N. J., June 11.—Considerable progress is being made by the utilities in solving the problem of the distribution costs, according to F. A. Merrick, president of the Westinghouse Electric and Manufacturing Company. Mr. Merrick made this statement in connection with the annual convention of the National Electric Light Association, which is being held in Atlantic City this week.

"This association, in cooperation with other national groups," said Mr. Merrick, "is doing very constructive work on the problem of cost reduction in the distribution of goods between the producer and the consumer.

"For the past twenty years the United States has led the world in developing productive machinery which has appreciably reduced production costs. The science and skill of the country's best engineers and physicists have been engaged in this great accomplishment, but the same degree of scientific skill and research effort has not been applied to what is commonly termed distribution cost, in spite of the fact that high distribution costs have a problem of nation-wide interest for a number of years.

"Since the National Electric Light Association has at its command numerous highly trained and skilled research engineers, and enjoys the fullest measure of co-operation from all the leading manufacturers and industries of all kinds, we may look forward to worthwhile accomplishments in its effort to help solve the perplexing problem of distribution costs. The progress that the electric power industry has accomplished in reducing distribution costs for its own product may be regarded as an example of what they may also accomplish in the broader problem of the distribution of goods."

McCLAREN BOOSTS OUTPUT TO 1,400 UNITS, BEST IN PAST 20 MONTHS

Charlotte, N. C., June 11.—Production of automobile tires at the McClaren Rubber Company's plant here was increased this week to 1,400 units, the highest point reached since the depression struck this section about twenty months ago.

I. Eisbrough, general manager of the plant, expressed the opinion that production on this daily level will be continued throughout the summer months and probably into the early weeks of autumn. Collections from dealers are continuing somewhat slow, with a tendency to improve, the general manager said. "In the credit situation, however, there has not been much change and money still is tight," he explained.

Approximately fifty employees recently have been added to the plant's pay roll, the total now being 350 in the manufacturing departments.

"We feel much better about the situaion than at any time since we came here," he added. This corporation was reorganized early in this year, when it was separated from the Ajax Tire and Rubber Company of Racine, Wis. Mr. Eisbrough and his associates came here then to take over the management of the McClaren properties.

CZECHOSLAVAKAIAN CAR MANUFACTURERS MERGE

Washington, D. C., June 11.—Merger of three of the largest automobile manufacturing companies in Czechoslavakia for the purpose of rationalizing the industry and reducing overhead expenses is under negotiation, according to a cable to the automotive division of the Department of Commerce today from Acting Commercial Attache S. A. Woods at Prague.

The companies involved are the Prage, Skoda and Tatra works, and it is expected that the new organization will be perfected by the beginning of next year.

TORONTO HAS FORD COMMERCIAL DISPLAY

Montreal, Que., June 11.—Ford dealers in Toronto inaugurated the most comprehensive commercial car display in their history recently with a parade through the business district of more than a score of Ford commercial units.

During the display period a wide range of Ford commercial body types of special utility, as well as the standard commercial types, are being displayed in the showrooms of the eight Toronto dealers: Watson Motors, Ltd.; Riverdale Garage, Ltd.; Parkdale Motors, Ltd.; See & Duggan Motors, Ltd.; Nicholson-Whittaker, Ltd.; W. C. Warburton & Co., Ltd.; Puddicombe Motors, Ltd., and North End Motors, Ltd.

In addition to the standard bodies manufactured by the Ford Motor Company of Canada, Ltd., exhibits of bodies built by other Canadian manufacturers are included. These manufacturers are co-operating with the Ford Motor Company in the display.

CHEVROLET DEALERS IN SEATTLE ORGANIZE

Seattle, Wash., June 11.—The Seattle Chevrolet Dealers' Club has just been organized, with Capt. C. H. Wells of the Chevrolet dealership, C. H. Wells, Inc., as its president. Six Seattle dealers are members. L. E. Titus, formerly of Olympia, and other towns near there, but now University district Chevrolet dealer, is secretary-treasurer. Officers are to serve for only three months, when the new ones will be elected.

Meetings will be held by the club, the keynote of which is to be improved service to the owners of Chevrolet cars. Members of the club are, in addition to the above, W. S. McNamara, Pierre Weiss, Stanley Nelson, W. J. Sullivan and L. M. Norton.

A. M. A. URGES UNIFORM OIL MEASURING DEVICES

Washington, June 11.—Standardization of a uniform size and type of oil container, to be used by gasoline filling stations in selling lubricating oil to motorists, was urged this week by the American Motorists Association in conjunction with the twenty-fourth national conference on weights and measures.

"The conference went on record as strongly disapproving the present method employed by filling stations in dispensing oil to motorists, except in an approved measured type of over-sized bottle which permits a motorist, purchasing a quart of oil, to get a full quart.

As the result of the conference, which was participated in by twelve states, specifications for a standard type of container were adopted, which, if put into effect by the states, it was declared, would save millions of dollars annually to the motorists of the country. The American Motorists Association, through its affiliated clubs, will urge adoption in each state of the recommended type of dispensing container.

OIL BURNER MAKERS TO HOLD MEETING

New York, June 11.—A general conference of oil burner manufacturers to discuss the elimination of unethical trade practices confusing to the public and destructive to the industry was called by the executive committee of the American Oil Burner Association at a special meeting here today. The conference will be held at the Royal York hotel in Toronto on July 13, the day preceding the directors meeting of the Association when most of the important manufacturers will be present.

DEDICATED NEW BUILDING

Milwaukee, Wis., June 11.—Kuhl Motor Company, new authorized Ford dealer on Eighth Street, formally dedicated its new sales and service building recently. Frank J. Kuhl is head of the concern.

Massillon, Ohio, Chevrolet Sales on Par With Last Year

MASSILLON, O., June 11.—With the return of confidence and consequent restoration of business here, Chevrolet outlook in the greater Massillon area is most encouraging, it was learned following a survey of leading dealers here this week. Sales of new passenger cars in the five months of 1931 are equal to those of the same period a year ago and there is no indication of waning interest, it was intimated by distributors.

Carl Hess, Inc., largest Chevrolet distributor here, reported, with the exception of January and March last year, sales to date this year have been ahead of the 1930 total. This firm delivered seventeen new passenger cars in April this year, as against three the same month a year ago. In May sales fell off somewhat, but held their own with the same month in 1930.

In spite of the general lull in the steel industry in the Massillon area, which is largely dependent on steel and its allied lines for employment, Chevrolet the first five months of this year has dominated the lower priced car field. The sedan and coach so far have been most in demand, although there has been a strong call for the coupe and sport models, which have found much favor with the younger generation.

Massillon until 90 days ago was hard hit by the apathy in the steel industry and just as soon as the unemployment situation reached the serious stage, automobile buying also was halted. The last half of 1930 saw little or no activity in new car sales here. The uptrend started soon after the first of the year and with Chevrolet immediately after the introduction of the new model in December. Since that time there has been a gradual increase in monthly sales with a likelihood that monthly turnover will be no less as the summer progresses.

"We have no complaint to offer with regard to new sar sales," said an executive of the Carl Hess, Inc., in discussing the Chevrolet outlook locally. "We feel that Massillon is responding graciously to the new Chevrolet and that sales are highly satisfactory in face of conditions here," he added. "As to the future, we believe sales will continue to be up throughout the summer, and if conditions continue to improve our 1931 sales will show a substantial gain over the previous year."

Dealers here declared they are well pleased with the co-operation they have received from the manufacturer this year, and attribute their heavy sales to adhering to helpful campaign stunts recommended by the manufacturer and by the untiring efforts of their individual sales organizations, all of which have been conducting an intensive drive for new business since the receipt of the first new car in this district last December.

Service demand with Chevrolet dealers has been of good volume most of the year, according to dealers themselves, although there have been times when there was a period of a few days when their shops were not so busy as they had been earlier in the year. There is little activity in parts, and accessory demand has fallen off, now that the new models are coming through fully equipped.

FORD DEALER MOVES

Hollywood, Cal., June 11.—Gray Motor Company, for twenty years Ford motor dealer in Hollywood, has moved from 1716 Cauhenga Blvd. to 1742-48 Cauhenga Boulevard.

Engineers in a Listening Mood!

At White Sulphur Springs, June 14th to 19th, engineers, production men and other factory officials will gather to discuss important papers and problems in connection with their business.

Reports of the meetings each day, personal news, reprints of papers and news of all the rest of the industry will appear daily in issues of Automotive Daily News. Copies of Automotive Daily News will be distributed to those in attendance and also mailed to thousands who cannot attend. This is bonus distribution and not part of the regular A. B. C. circulation.

Advertise in each S. A. E. issue. No other automotive medium can give service equal to Automotive Daily News.

Forms close two days preceding publication date.

Automotive Daily News

H. A. TARANTOUS, *Business Manager*, 350 HUDSON ST., N. Y. C.

WESTERN OFFICE: Willard E. Cotton, Manager, 333 No. Michigan Ave., Chicago, Ill.
DETROIT OFFICE: Geo. M. Slocum, Manager, Fisher Building, Detroit, Mich.

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
350 Hudson St., New York, N. Y.
O. J. Elder, President. H. A. Tarantous, Vice-President. Alexander Johnston, Secretary.

Entered as second-class matter August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879.
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000

Distribution—Net paid Average over 10,000 daily guaranteed. Member A. B. C.

Mail subscriptions to CIRCULATION DEPARTMENT 350 Hudson St.

Subscription Rates—One year, $12.00; two years, $20.00, for United States and Canada, also Mexico, Cuba and Panama.
To Other Countries—One year, $15.00; two years, $26.00. Single copies, 5 cents.

FRIDAY, JUNE 12, 1931

ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager. 350 Hudson St., New York, N. Y.
George M. Slocum, Manager Detroit Bureau, 427-8 Fisher Building, Detroit, Mich., phone Empire 3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phone Central 5936; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash. Address ALL advertising and business correspondence to 350 Hudson St., New York City.

EDITORIAL DEPARTMENT

350 Hudson St., New York, N. Y. Telephone CA nal 6-1000
Alexander Johnston, Editor. William C. Callahan, News Editor.
Statistical Department (registrations and specifications), P. J. Robas, statistician. C. J. Alexander, sales analyst. Engineering Department, A. Benson Carleton, technical editor; J. Russell Walsh, engineering editor. Merchandising Department, Charles S. Zack, editor. Art Department, John Bauersfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Empire 3500. Contributing editor, John C. Weimore.

How Long?

IN 1930 the automotive industry and the motor vehicle owners of the United States paid a total of $1,000,388,270 in various taxes, state and municipal. Of this total $355,704,860 went for registration fees. Another $494,683,410 was taken by fuel taxes. The final $150,000,000 went into personal property and municipal taxes of various sorts.

But do not forget that while most of this was paid by car owners, the total is still an impost on the automotive industry; it represents sales resistance, delay in buying and actual removal of prospective customers. We can boast of having the doubtful honor of being the most taxed industry in America, if not in the world.

Harking back a few years, to 1919, the taxation total levied against automotive activity was $222,365,681 and of this $101,138,191 was the amount of the Federal excise tax, imposed to help cover the extraordinary expenses of the war. In 1929 this excise levy was removed from our industry, and yet in 1930 the total taxation against motor vehicles was more than four times that of 1919.

In the meantime another great industry has grown to a florid maturity in the United States. We refer to the business of selling liquor in contravention of the law. There is no sure and definite method of determining the volume of this business, since its very nature forbids announcement or returns of any kind. Professional wets have offered figures indicating that the business amounts to nearly $3,000,000,000 a year. The professional drys roar that this estimate is ridiculous, but they offer nothing convincing in rebuttal. If we reduce the total business done in liquor sales to $2,000,000,000 per annum, the sum is still staggering.

Yet from this new big business giant the government derives not one cent of taxes. It is true that the bootleggers pay a form of taxation. It is quite probable that half of their income goes to a "fixing" fund. Politicians, policemen, special operatives must all be "fixed" to wink at the illegal trade. Our guess is that bootlegging hush money just about equals in volume the taxes paid by American citizens for the privilege of using motor transportation.

How long the present depression would last if the fixing fund of the bootlegging industry were turned into legitimate taxation channels, we can only guess. But certain it is that this criminal money is doubly criminal when a legitimate industry is called upon for an equal amount of legal taxation to meet the needs of government. How much longer can such a situation exist?

Bus Travel Gains

DURING 1930, it was recently announced by the National Association of Motor Bus Operators, 1,866,000,000 people were carried by urban and inter-city bus lines. This represents an increase of 10,000,000 passengers over the record for 1929.

In the same year of 1930 motor buses traversed 1,825,000,000 miles of city streets and rural highways. The increase of mileage traveled over that of 1929 amounted to 75,000,000 miles.

During 1930 the mileage covered by bus lines also showed a remarkable gain. It is stated by this association that in 1930 there were 827,000 miles of bus routes in operation, which compares with 782,000 miles at the end of 1929. The number of buses in service in 1930 was 95,400, an increase of about 3,000 units over the 1929 total.

There is but one answer to this showing. It is that Americans generally find motor bus travel a satisfactory and efficient method of transportation and want more of it. No unprejudiced person can gainsay this. If any organization or division of industry is permitted to throttle the bus system of the country and prevent its expansion as need demands, it, or they, is, or are, depriving the people of the United States of something that is making easier and pleasanter their daily lives.

Differential Discussions

IN this column Automotive Daily News is glad to present the opinions of its readers on topics related directly to the automotive industry. Automotive Daily News, however, must disclaim responsibility for such opinions. All questions regarding merchandising, technical problems or other information pertaining to automotive industry will be answered without charge in this column.

Says Factories Must Enforce Sane Trading Plan as Outlined by Barnett

Automotive Daily News: I have just finished reading the comments of the Burke-Nash Company, Hartford, Conn., on the article in the June 5 issue by Mr. Barnett, and I wish to say that to my mind, the latter gentleman has by much the best of the argument. Certainly there is no cure-all, as the Burke-Nash people say, but certainly they have failed to provide a remedy for the used car problem. Mr. Barnett has done so.

The plan advanced by the Burke-Nash people is, as they say, ideal. It has, however, one serious fault; namely, it will not work out. It is based, fundamentally, on buying used cars right. It is certainly surprising to find any dealer speaking optimistically of buying used cars right. There may be dealers so doing (doubtless the Hartford frm s n ths fortunate class, else they would be loath to advocate the plan published), but the great majority are unable to do so.

In this locality conditions indicate that, as Mr. Barnett said in the former issue, if the dealers are to be saved, the factories must save them, as they are beyond the point of saving themselves. A dealer in this part of the country has his choice of dealing sanely in used cars, giving what he can get for them, or very little more, and seeing the new car sales go to the long traders, or he can compete with the long traders, outbid the other fellow and thus get his share of the business. It is all very well to talk of "selling the prospect on your car." Maybe he will want your car, all right, but in the large majority of cases he will deal where he can get the biggest allowance.

Even so, it is not the trade-in on the new car that causes the grief. Could this trade-in be sold at a loss of only $25-$50 for cash, with no additional trade to be handled, the dealer could still keep his head above water. It is the second and third trades that pull him under. He may get a fairly salable car traded on the new one, but, in order to sell it, he must probably take a 1926 model of some description, and, to get rid of it, he takes in junk. If he refuses to do so, it is only a short time till he has his entire capital tied up in used cars, for it is especially true in the case of the used car buyer that he is out for the best trade on his ancient wreck, and he is going to the dealer that will give it to him.

Mr. Barnett's plan proposes to get rid of all this by making it impossible for the dealer to trade. This would cut down his sales, it is true, but he would make a decent profit on what sales he made. And it would have another most beneficial effect. With the dealers out of the picture as used car traders, there would be an opportunity offered for the establishment of used car markets, which could be handled in much the same business way advocated by the Burke-Nash people. These men could make money out of used cars, as they would not be in competition with a flock of wild traders, willing to sacrifice anything to make the sale.

Higher discounts to the dealer would undoubtedly help him to a certain extent, but probably he would just use the added discount as a wider margin for his trades. Mr. Barnett's idea comes far nearer the solution than any discount arrangement could possibly do.

The only thing I see against Mr. Barnett's plan is this: The manufacturers are not likely to want to stand for it. It would undoubtedly cut down sales of new cars at first. They have been preaching to us for some time to make our money out of service and parts, thus offsetting the used car losses, and it has been a handy thing to shoot the bulk of the factory service problems on the shoulders of the dealer. But in the end the factories would also benefit, for, at the present rate, there will be but few dealers left before many years, and the dealer is as necessary to the factory as the factory is to the dealer.

Let us give Mr. Barnett's plan a trial.

R. W. M'DOWELL,
Secretary Oldsmobile Connellsville Co., Connellsville, Pa.

COMING EVENTS

JUNE

8-12—**Chicago, Ill.** Radio Manufacturers' Association, annual show.
10-12—**Swampscott, Mass.** American Institute of Chemical Engineers' meeting.
14-19—**White Sulphur Springs, W. Va.** Society of Automotive Engineers, summer meeting.
15-18—**Madison, Wis.** American Society of Mechanical Engineers, fourth national oil and gas power meeting.
17-19—**French Lick, Ind.** Steel Founders Society, mid-summer meeting.
21—**Montlery Track, France.** Automobile Club of France, grand prize race.
22-26—**Chicago, Ill.** American Society for Testing Materials, thirty-fourth annual meeting.
22-27—**Boston, Mass.** National Association of Credit Men, convention.
29-30—**Chicago, Ill.** National Association of Taxicab Owners, meeting.

JULY

4—**Altoona, Pa.** Automobile race.
19—**Nurburg-Ring, Rhineland, Germany.** Automobile Club of Germany, grand prize race

SEPTEMBER

1-3—**Cleveland, O.** Hotel Statler, Society of Automotive Engineers, twentieth annual aeronautical meeting in conjunction with National Air races.
8-17—**Utrecht, Holland.** Utrecht Fair, bus and truck show.
16-17—**Atlantic City, N. J.** National Petroleum Association, annual meeting, Hotel Traymore.
20-26—**Springfield, Mass.** Eastern States Exposition.
21-25—**Boston, Mass.** American Welding Society, meeting.
28-29—**Atlantic City, N. J.** National Association of Motor Bus Operators, fifth annual meeting, Hotel Ambassador.
26-Oct. 2—**Atlantic City, N. J.** American Electric Railway Association, annual meeting.

OCTOBER

1-11—**Paris, France.** International Automobile Salon.
2-3—**Houston, Tex.** American Institute of Mining and Metallurgical Engineers, petroleum division meeting
12-16—**Chicago, Ill.** National Safety Council.
14-16—**Pittsburgh, Pa.** Society of Industrial Engineers, convention.
15-24—**London, England.** International Motor Exhibition, Olympia Hall.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.

Says Tire Repairmen Lose Half Their Profits

Automotive Daily News: Ten to fifteen years ago, with only about half as many pneumatic tires in use, tire service and repairing was a profitable business. Indeed, some of our present wholesale jobbing houses, with sales in the million-dollar class, found their beginning in the tire vulcanizing and repair field.

Good roads and paved highways have taken away much of the need for tire repairing, but, to offset the lower cost per tire upkeep, there are twice as many tires that are carrying America's motor vehicles over good roads and bad that need servicing and repairing.

It is not so much good roads and paved highways or better tires that has taken profits away from the tire repairing and servicing trade as it is the foolish idea of trying to bring more work into the shop by cutting profits to keep the maintenance cost down for the tire user.

Tire users go to tire service stations and repair shops just like they go to the doctor, only when necesary, and the tire repairing bill should and will be paid with as much respect for expert service as the doctor's bill if the amount is based upon labor, material and overhead costs, plus a fair profit on investment.

When a tire comes in for repair service it should be examined and whatever is necessary to put the tire into first-class condition should be recommended to the tire user immediately, and sell him full tire repairing. If there is a puncture in the tube, there is also one in the casing, and both should be repaired. Not one tire repair man in a hundred tries to do this. They have gotten into the habit of thinking only of tube patchings to repair punctures when, in fact, that is only half the job, half the sale and half the profit.

Those little holes in the outer casings get larger as the tire continues in service. They do real damage later by letting in the foreign elements that cause buckling fabric, corrosion, rust, dirt and tire rot.

Tire repairing and servicing is a very important part of automotive maintenance and has a right to exist on a higher plane of prosperity by getting its full share of the expense dollar spent for car upkeep.

Tire repairing and servicing should be thought of in terms of profit, just the same as package merchandise in drug stores and food stores, and the mechanic's time is worth as much as mechanics are paid in any other line of endeavor.

To repair a punctured tube means to remove and replace the complete tire. The usual charge is 35 cents for the tube patch and mechanical service, and, if the mechanic uses a little salesmanship, a repair of the puncture in the outer casing can be sold at the same time the tube is being patched. Thus two sales and two profits are made, with no more time involved for removing and replacing the complete tire.

In almost any other commercial activity prices would be regulated to support the enterprise on a profitable basis according to the amount of service such line requires. There would be just as many punctured casings and tubes brought into shops for repairing at 75 cents as there are now at 35 cents to 50 cents, because it is a fair charge for an important part of keeping motor vehicles going.

When a motor is overhauled it gets new spark plugs, ignition wires, ignition points, battery cables, etc., and when a tire is repaired it should include reconditioning the outer casing, new rim flaps, new valve cores and caps and a new coat of white dope on the inside casing walls and a coat of rust-proofing paint in the rim.

It will take a little while to win the tire users, respect for correct tire repairing and service to this higher plane, but it can be done, and some day they will start doing it and that branch of automotive service won't look so ragged and starved out.

HARRY WEDLER
The Wedler-Shuford Company
St. Louis, Mo.

GAS TAX REVENUE UP IN WISCONSIN IN APRIL

Madison, Wis., June 11.—The 4-cent gasoline tax produced $1,311,103.84 in April, its first month of operation, State Treasurer Solomon Levitan stated in his monthly report. The revenue represented an increase of more than $600,000 over that of the preceding month, which had the 2-cent gas tax. It also was $600,000 more than that produced by the 2-cent tax in April, 1930.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Dealers Use All Advertising Means to Boost Service

Newspapers, Direct Mail And Billboards Pressed Into Service; Concentrate Also on Used Cars In Northern New Jersey With Result That They Report Increase in Business

NEWARK, N. J., June 11.—**Concentration on used cars and service throughout northern New Jersey has resulted in increased business in these two lines, according to a survey.**

That dealers are not sitting back and waiting for business to walk in is demonstrated by their newspaper, direct-mail and billboard advertising. Suggestions for service and flat rate prices are featured. Dealers are talking up their accessories and replacements. They are improving their equipment and installing new testing devices, and they report business better than a year ago.

Dealers say that there has been a marked improvement in employment in their territories. Used cars are more in demand, with prices better.

In various sections of northern New Jersey dealers took part in cooperative display ads to dispose of used cars for the Memorial Day holiday with excellent results.

The Kanter Chevrolet, Inc., of Passaic, reported good results with a used car sale the latter part of May. In its newspaper advertising the concern stated that "the tremendous success of the new Chevrolet six has filled our used car stocks to overflowing with cars traded in."

While some dealers were advertising used cars as Memorial Day specials, the Union Automobile Company, Inc., Chrysler dealer, of Union City, devoted its copy to an offer for special service, which included: Tune up motor, adjust valves, adjust charging rate for summer, fill battery with water, drain and wash out radiator, clean battery terminals, drain motor oil, refill with good grade oil, grease entire car, oil springs, tighten spring clips, tighten shackle bolts, tighten body bolts, tighten and adjust steering, check brake action, line up front wheels and adjust brakes.

This offer, including all material furnished, was priced at $8.50 for four-cylinder cars, $11.50 for sixes and $13.50 for eights.

The Elizabethtown Motor Company, Oakland-Pontiac dealer, 582-588 Morris Ave., Elizabeth, reports business has increased during the year and J. S. Wintermute, president of the company, detects definite indications of a trade revival.

Advertising, backed with service, is given as the reason for increased business by Joseph Blumetti, co-owner of the Hollywood Garage, Jersey City.

"If you have the best and push it in the best way you know how," he said, "you can't help but get the business. We do everything we can to tell our public about the products we carry and then when they come to try them we make it a point to give first-class service.

"We go after the business in a number of ways. We do advertising in the local newspaper. We have worked up a mailing list of 3,000 names and we send sales material to these every month. We do billboard advertising and also advertise our call-and-deliver lubricating service."

"But advertising won't build up a business unless you have the best of service. That's why we are open twenty-four hours a day and have twelve men on the various shifts. And when a customer comes in, either attracted by the advertising or on the recommendation of a friend, we do everything we can do to make him feel at home.

"We take an interest in him and in his car. If the car needs new tires, we talk tires. We check on oil. We also offer the car owner every personal service that we can, and keep road maps on hand to take care of customers who are planning a trip.

"And we've found that the system works. Good products, plus a good campaign to get them before the public, mean good business. Our motor fuel sales increased 1,000 gallons in one month, oil sales jumped 100 per cent. in the same period, and we have sold large lots of all our specialties."

Henry L. Thurston, head of the Allendale Sales and Service, Chrysler dealer in Allendale, is a firm believer in demonstrating to sell service. One of his best accessory or replacement lines is tires.

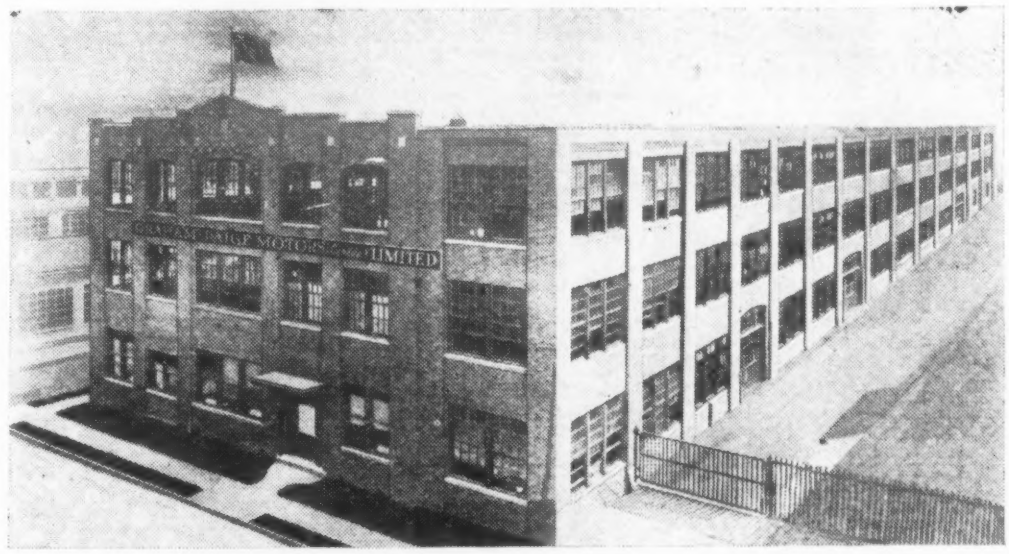
"I don't have any trouble selling tires against mail order competition," he says. "When a customer says he can get a mail order tire for less money, I ask him to bring in a mail order tire and line it up with the brand I handle and see the difference."

Five or more greasing jobs a day, day in and day out, mean money in the cash register, and that is one of the reasons that Dowd Brothers of Elizabeth push their greasing service every time they get a chance.

"When you grease a customer's car," says William Dowd, "you get about the best chance there is around a station to show him what real service is, and to get acquainted with him. If he is satisfied with the work, nine times out of ten he will become a regular customer.

"To make the work satisfactory, we keep records of grease and oil jobs for our steady customers, so that we can tell them when a new job is needed and save them the trouble of worrying about it. That gives us a full-time contact with them, and such a contact means regular service when it is needed."

New Graham-Paige Plant in Canada



ABOVE IS THE NEW GRAHAM-PAIGE PLANT recently acquired at Walkerville, Ont., and in which Graham cars for Canadian consumption will soon be produced. The new plant is now being made ready and necessary machinery is being installed to start production

DE VAUX ADDS 24 NEW DEALERS, DISTRIBUTORS

Grand Rapids, Mich., June 11.—R. H. Mulch, general sales manager De Vaux-Hall Motors Corporation, today announced that twenty-four new De Vaux distributors and dealers were appointed last week. Fifteen appointments were made in the Eastern and Central regions and eight in the Pacific Coast region, while Naayem Motor Import Company of Beyrouth was appointed distributor for Syria, to operate under the export division.

DE VAUX MAY SALES UP IN KENT COUNTY

Lansing, Mich., June 11.—It was announced here today that De Vaux sales in Kent county for May totaled fifty-nine cars. This gave De Vaux third place in official registration figures, Ford and Chevrolet being the only cars to outsell De Vaux in the county.

NEW OLDSMOBILE FIRM

Los Angeles, June 11.—Figueroa Oldsmobile, Ltd., has been organized with sales and service headquarters at 1925 Figueroa St., as a metropolitan Oldsmobile dealer. L. P. Popkin heads the organization. R. P. Alford is sales manager.

POTTERY TRADE GAINS AID TRUCK SALES IN OHIO VALLEY

(Continued from Page 1)

Based on May sales, when 75 per cent. of all commercial cars delivered were of the ton and a half type, it is evident that it is this class of commercial cars that is most in demand. Dealers said many fleet owners are replacing their heavy duty trucks with smaller and cheaper units, including some of the larger oil companies which for years have been maintaining extensive truck fleets, using the higher priced units.

GROUP IN VIRGINIA TO STUDY BUS, TRUCK TAX

Richmond, Va., June 11.—The appointment of a departmental commission to study the bus and truck license tax problem will be Gov. John Garland Pollard's first step toward preparing recommendations on motor tax revision for the 1932 General Assembly, the governor stated orally June 10.

He said that the commission will include the tax commissioner, C. H. Morrissett; controller, E. R. Combs; director of division of motor vehicles, T. McCall Frazier; state highway commissioner, Henry G. Shirley; chairman of the state corporation commission, H. Lester Hooker, and others.

BROCKWAY RECEIVES LARGE N. Y. STATE ORDER

Cortland, N. Y., June 11.—Brockway Motor Truck Corporation, manufacturer of Brockway - Indiana trucks, has just been awarded an order for fifty 3-ton dump trucks by the New York state highway commission, Department of Public Works, at Albany.

President R. F. Black of the Brockway company in making this announcement stated that it was particularly gratifying to receive this additional fleet order from New York state, having delivered a fleet of 104 Brockway-Indiana dump trucks to the New York State Highway Department just a little more than a year ago. This fleet of Brockway-Indiana units will be used throughout New York state in carrying out the greatly increased road-building and maintenance program.

SHULER AXLE REPORTS GAIN IN AXLE SALES

Louisville, Ky., June 11. — The Shuler Axle Company, Inc., this city, according to W. E. Dugan, president and general manager, is enjoying a nice volume of business from the trailer field, due to recent state legislation that requires brake equipment on trailers.

New Dealers Appointed

OREGON

Studebaker—Loren Loose, Salem; Motor Inn Garage, Tillamook.

PENNSYLVANIA

Hudson—Price's Garage, Woodbury; Bob Anderson, Inc., York.

Studebaker—Stanley J. Grontkowski, Plymouth; Charles C. Weicht, Shippensburg; Benjamin Trosky, Edwardsville; Bell & Simpson, Huntington; N. Buckner & Son, Doylestown; N. Buckner & Son, Dublin.

Graham-Paige—B. & B. Motor Company, Inc., Allentown.

TEXAS

Hudson—Loyd Hines Motor Company, Dublin.

Studebaker—S. L. McClure, Wichita Falls.

VIRGINIA

Studebaker — Baker-King Motor Company, Inc., Bristol; Jarrett-Chewning Company, Inc., Roanoke.

WISCONSIN

Auburn—Public Service Garage, Hartland.

Hudson—Curtis Motor Sales, Appleton.

Willys-Overland — Cheney Motor Company, Wabeno; North Hudson Auto Company, Hudson; Gavic Brothers, Spring Valley; Miles Col-

Hudson—Sommer Motor Company, Milwaukee.

Studebaker — Goessling Motors, Inc., Janesville; J. T. Duxbury & Son, Hixton; Winkel Motor Sales, West Allis.

Graham-Paige—Peotter Brothers, Clintonville.

NEW YORK

Auburn—Central Auburn, Inc., Lawrence, Long Island; Associated Motor Sales Corporation, Nyack; McAndrews Auburn Company, Tuckahoe; Coney Island Auburn, Inc., Coney Island; Simmons Garage, Richfield Spring; Dayton Service Garage, Dayton; L. Beyer Motor Company, Inc., Newburgh; L. Beyer Motor Company, Inc., Poughkeepsie; Municipal Square Garage, Inc., Waldes; Kingsland Garage, Mahopac; Wittner Motor Company, Richmond Hill, Long Island; Crumb Motor Sales, Norwich; John F. Bertram, Inc., Huntington, Long Island; Forest Hills Auburn-Cord Salon, Forest Hills, L. I.; George Record, Watkins Glen; Auburn Sales of Flushing, Long Island; J. A. Jensen Auto Sales, Inc., Bronx, New York City.

Marmon — Birch Motor Sales, Hempstead, Long Island.

Hudson — Meehan & Kenefick, Rye; Clarence E. Houghton, Perry.

Willys-Overland—Otto C. Gridley, Middleburg; John J. Sullivan, Angelica; Stapleton Motor Sales, Monticello; Henry A. Ferguson, Auburn; R. G. Howe, Clayton; L. A. Bellinger, Lowville; R. E. Davis & Son, Oswego.

INDIANAPOLIS DODGE SALES UP 73% IN MAY

J. C. Scanlan Co. Tops Year Ago by Good Salesmanship

Indianapolis, Ind., June 11.—An outstanding example of salesmanship was given here during May by J. C. Scanlan, head of the J. C. Scanlan Company, Dodge distributor, when, in the face of a declining market for automobiles, he and his selling organization more than doubled total deliveries for the previous month, and showed a gain of 73 per cent. over May of last year.

Figures compiled by the Indiana Clipping Service, from official state registrations, show the Dodge organization registered seventy-six new automobiles last month, against thirty-three in April this year, and forty-four in May of last year. This performance puts the Dodge line within striking distance of the five months' total for last year, and Mr. Scanlan has predicted that the 1930 total will be exceeded by a wide margin before the year is concluded.

Personal guidance of his sales staff, along with every assistant in closing deals, is Mr. Scanlan's way of explaining the phenomenal record made by his company last month, when Dodge showed the largest percentage increase of any car in the entire list.

Following a reorganization of the sales department, in which O. H. Andrews, a veteran in the Dodge ranks, was named sales manager of the Scanlan Company, a system of material assistance was put into effect, with both Mr. Scanlan and Mr. Andrews aiding the salesmen in getting customers into the salesroom and into the cars for demonstrations.

Sales meetings are held daily, after which either of the officers of the companies accompany the salesman on difficult deals to assist in securing the order. By this method of working closely with the contacting crew and keeping on the alert for new prospects, deliveries showed amazing improvement and the Dodge distributor anticipates continued good business throughout the summer. Used car stocks, Mr. Scanlon reported after closing one of the biggest months in the history of his company, were lower than at the beginning of the month.

LITTLE GIANT PRODUCTS ABSORBS LEE TRAILER

Peoria, Ill., June 11.—Little Giant Products, Inc., has absorbed the Lee Trailer and Body Company, Plymouth, Ind. The Plymouth plant will be operated as heretofore, but the direction will be from the Peoria office.

New products will be started just as soon as time will permit. There will be no changes in the executive personnel, but additions are contemplated.

FORCE SALES MANAGER OF DETROIT REO SALES

Detroit, June 11.—Lee. W. Force has been appointed sales manager of the Reo Sales Corporation of Detroit, distributor of Reo passenger cars and speed wagons in that city and the surrounding territory, according to Neil Mulhern, manager of the Detroit company. For several years Mr. Force has been Reo dealer in Royal Oak, Mich. Prior to that time he was with the Detroit branch for a number of years.

"GOOD-WILL" DINNER

Atlanta, Ga., June 11.—Ernest G. Beaudry, Ford dealer, tendered his employees and their friends a "good-will" dinner at the Ansley Hotel recently. Short talks were made by Mr. Beaudry, C. M. Daniels, B. F. Hart and J. B. Paris. A. C. Menter acted as toastmaster.

RIM PRODUCTION IN MAY SECOND HIGH OF YEAR

Cleveland, June 11.—Automobile rim production last month, as indicated by the Tire and Rim Association's monthly report of inspections and approvals isued today, was the second largest for any month since May one year ago. The figures, however, contain a forecast of seasonal recession revealing as they do a 12 per cent. decline in output from the April total.

April inspections and approvals totaled 1,717,652, the peak figure for the year to date. This compares with 1,508,349 for May, and with 2,010,067 for May, 1930. May output this year was about 14½ per cent. lower than one year ago. This is a closer approach to parity with output for a corresponding month of a previous year than at any time for many months. Unless automobile production slumps unexpectedly, the June figures will show an even more favorable comparison.

Cumulative production of rims for the first five months of 1931 totals 7,176,366, compared with 9,666,639 in five months of 1930. The decline is approximately 25 per cent.

The drop center rim used in the production of wire wheels continues to gain in popularity. In May the Tire and Rim Association inspected and approved a total of 954,461 drop center rims, which was 63.3 per cent. of total rim output. This is the highest proportion of drop center rims so far reported, the April ratio being 60.3, that for March 58 per cent., that for February 42.8 per cent. and for January 28 per cent.

During the first five months of this year manufacturers have turned out 4,272,654 drop center rims, compared with 2,713,491 units in the first five months of 1930, which is almost 60 per cent. increase. In five months this year drop center rims, not including the 19 by 3 OOD rims, manufactured by Ford and Chevrolet, have comprised 59.5 per cent. of total output against 28.1 per cent. of the total for the corresponding period of 1930.

Output of 20-inch truck rims in May this year totaled 228,993, or 15.2 per cent. of total rim output, compared with 271,868 in April and 281,464 in May, 1930. The April ratio was 15.8 per cent. and that for May, 1930, was 14 per cent.

Very few airplane rims have been produced so far this year, the total amounting to only 423 in five months against 1,697 in the corresponding period of last year. From 1924 to 1930, inclusive, airplane tire rims were being manufactured at the average rate of about 2,000 a month, which would be approximately 10,000 for five months, against the 423 reported for five months of 1931. This reveals the severity of the depression in the airplane manufacturing industry.

Following are comparative monthly figures of rim production for 1929, 1930 and 1931, respectively, as shown by the Tire and Rim Association's statement of rims inspected and approved:

*Comparative monthly record of rim production:

	1931	1930	1929
January	681,301	1,601,326	1,835,207
February	1,010,774	1,653,421	2,265,024
March	1,425,336	2,061,999	2,613,403
April	1,717,652	2,339,834	2,729,899
May	1,508,349	2,010,067	2,574,787
June	.....	1,338,226	2,134,213
July	.....	1,449,161	1,896,666
August	.....	1,504,187	1,570,555
September	.....	1,052,109	2,110,031
October	.....	863,579	1,647,350
November	.....	920,435	596,989
December	.....	567,355	879,548
Totals	.....	17,364,096	24,143,528

*As indicated by rims inspected and approved by the Tire and Rim Association, Inc., Cleveland.

TODAY

More than ever, outstanding performance and unmatched value are selling BROCKWAY-INDIANA TRUCKS

See these modern-day trucks and judge them by what they do—all truck construction, not a single unit adapted from passenger-car practice.

See them and compare their value.

BROCKWAY-INDIANA TRUCKS

BROCKWAY MOTOR TRUCK CORP.,
General Office and Factory
Cortland - - - - New York

CAR MAKERS PAY $5,692,707 DIVIDENDS

New York, June 11.—Dividends paid by manufacturers of automobiles in May amounted to $5,692,707, according to the Standard Statistics Company of New York. Total cash dividend payments made by domestic corporations in May were $229,608,425.

WESTON BUYS ASSETS OF JEWEL INSTRUMENT

Newark, N. J., June 11.—The Weston Electrical Instrument Corporation of this city has acquired the assets of the Jewel Electrical Instrument Company of Chicago. The terms of the deal provide for the payment of $500,000 in cash and 14,000 shares of common stock of Weston Electrical which have a market value at present of about $275,000.

A new corporation controlled by Weston Electrical Instrument will operate the business of Jewel Electrical Instrument.

NASH DEALER MOVES

Hollywood, Cal., June 11.—Homer Thompson, Nash dealer, has removed his establishment from 1748 Cahuenga Blvd. to 1716 Cahuenga Blvd.

MONARCH MACHINE TOOL OPENS CHICAGO OFFICE

Chicago, June 11.—To take care of the increased volume of business arising from this territory, and to give better service to Chicago customers, the Monarch Machine Tool Company of Sidney, O., has opened a Chicago office, located at 547 West Washington Boulevard, under the personal charge of Martin J. Luther.

The following Monarch Lathes will be on exhibition: standard engine lathes, precision tool room lathes, semi-automatic single purpose lathes, double carriage automatic hydraulic lathes, super-high speed lathes, Monarch-Keller automatic form turning machines.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

WISCONSIN AXLES

The sturdy dependability of Wisconsin Axles reflects the character of the men and methods that build them—engineering ability and high production standards — outwardly expressed as performance.

WISCONSIN AXLE CO.
Oshkosh, Wisconsin

Cumulative New Commercial Car Registration Statistics, April, 1931

Returns for today: LOUISIANA.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Some of this data has been published previously, but it is given here complete for the convenience of our subscribers. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Commercial car registrations do not include busses. **Comparative figures for April, 1930, will be found on Page 7.** **In this table are 47 states and the District of Columbia.**

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	FWD	Fargo	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Paige	Relay	Reo	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama			183		2				3	194	10	43					2				1		1			1	440	Alabama
Arizona			29		1					73		3					1										107	Arizona
Arkansas		1	98		12					146	2	48					5				1		2				315	Arkansas
Calif.	10	2	464	3	103		1	2	9	1270	23	63	2	11	1		39	2	15	7	27	1	22	2		58	2137	California
Colorado			110		22		1			250	8	14		1	1		5	2			2		1	3		1	421	Colorado
Conn.	3	7	168	4	45				9	337	14	25	1	17		1	23		1	10	10		4	7		8	694	Conn.
Delaware	4		35		1					78		9		2			1			1	2						133	Delaware
Florida			144		6					259	2	13					2						1			1	428	Florida
Georgia		5	136		12				3	254	8	46	1	7									6	2			480	Georgia
Idaho			56		10					74	1	8		1			4	1			1		2	2		1	161	Idaho
Illinois	2	10	513	33	77			1	16	816	23	121	1	10			7		8	3	32		1	19	4	78	1775	Illinois
Indiana		11	404	5	65	1		2	1	518	35	96		2		6	18		3	9	17		1	15	9	11	1229	Indiana
Iowa		12	426	5	47		1	1	2	473	8	131		1			16	3			20	1	3	13		1	1164	Iowa
Kansas			216	5	23		4			270	7	50					2				11	2	2	10	1	6	609	Kansas
Kentucky	1	6	167	2	18				1	182	6	31		1			3				7		4	7	1	3	440	Kentucky
Louisiana			137	1	10					197	4	41		2			1				3		2			2	400	La., 1930
Maine	1		354		60	1				465	11	13		12			6			3	23		4	7			960	Maine
Maryland	4	2	176	8	24			1	2	245	13	45		13			7				7	2	8	3		3	563	Maryland
Mass.	18	7	336	6	76				15	948	43	77		34	3		24		18	6	15		26	3		54	1709	Mass.
Michigan	4		333	6	47	1			9	755	27	49	3	4		1	10	2	1		13	1	2	13		10	1291	Michigan
Minn.			385	16	40		2		3	437	15	84	13	4	1	1	9	1			12	1	6	23		7	1060	Minn.
Miss.			84		5					147	1	16	1				2						1	1			258	Miss.
Missouri		7	480	11	41	1			5	465	18	74		2	3	2	6	2	5		3		2	10	1	36	1174	Missouri
Montana			58		8			1		107	1	26					1						2	2		4	210	Montana
Nebraska			207	4	11				2	235	4	58						1			10		1	10	1	1	545	Nebraska
Nevada			15		2					53	3	3		5			1	1								1	84	Nevada
N. Hamp.		2	101	6	8					185	4	6	1	4			6	1		5	4			2		1	336	N. Hamp.
N. Jersey	12	3	363	7	83			1	5	708	33	57	1	39		1	11		9	8	5		10	9	1	35	1401	N. Jersey
N. Mexico			60		4					75	1	8									1		2			2	153	N. Mexico
New York	50	74	929	59	195	1	1	3	17	2006	76	248	5	85	3	6	46	5	16	70	31	5	34	36	3	68	4072	New York
Nor. Car.			245		21					281	9	44	4	3	1		2				5	1	2	1		3	622	Nor. Car.
Nor. Dak.			87		14					92	1	46					7	1			2	1		3			254	N. Dakota
Ohio	4	8	501	9	77			1	4	894	36	114		12	3	6	11	6	3	14	29		26	25		64	1847	Ohio
Oregon	1		102		16				2	202	4	17	1	3			4	1	1		1		1			10	366	Oregon
Penna.	26	43	654	7	174	2	2	2	9	1124	45	131	8	42	3	10	26	2	16	25	32	3	23	32		23	2464	Penna.
Rho. Isl.	2	2	45		12				2	134	3	9		2			4		1				2	1			219	Rh. Island
Sou. Car.		2	186		11				1	150	1	6									1		1			7	365	S. Carolina
S. Dakota			79	6	10		1			57	1	30					2				7	2		3			198	S. Dakota
Tennessee		2	238	1	21				4	185	8	37		1			3				4		4	3	1	1	513	Tennessee
Texas	1	2	597	6	27	1	1		9	662	14	139		5		1	9				3		6	3	1	11	1498	Texas
Utah			69		5					100	4	11		1	1		3				1					6	201	Utah
Vermont		1	58		11					123	3	21					2							4			223	Vermont
Virginia		4	257	1	22				2	260	9	22	5	10		2					2	1	3	5		13	618	Virginia
Wash'ton			116		13	1			3	258	5	31		2		1	7				12		2	1		25	477	Wash'ton
West Va.	2	1	148		21				1	209	18	26	3				3			1	1			6		4	444	West Va.
Wisconsin			374	21	22	1	1		7	384	14	54	1	1		3	6		6	4	16	1	3	9	1	16	945	Wisconsin
Wyoming			49		12					55	3	13					2				3					1	138	Wyoming
D. of C.	10	1	33	4	12				2	147	9	16	1	4		1	2		1		1		4			5	253	Dis. of Col.
Totals	155	215	11005	236	1559	10	15	15	148	17539	587	2273	52	343	20	42	351	31	104	166	378	22	227	295	24	582	36394	Totals

Combined report: American La France and La France Republic.

N. A. F. C. NAMES GROUP TO MEET RESERVE BOARD

Chicago, June 11.—A committee to impress upon the Federal Reserve Board the necessity of making finance company paper eligible for rediscount by Federal Reserve banks was named here today by Victor L. Brown of Milwaukee, president of the National Association of Finance Companies. H. L. Braham of Cleveland is chairman, other members are J. C. Allaback, Cincinnati, Owen B. Augspurger, Buffalo, John W. Creekmur, Chicago, and Frank R. Hanrahan of South Bend.

Mr. Braham plans to call a meeting of his committee within the next few weeks to make arangements for presentation to the Federal Reserve officials. The committee is prepared to urge congressional action if necessary to bring about eligibility for rediscount of finance company paper.

NEW FISK DISTRIBUTOR IN LOS ANGELES SECTION

Los Angeles, June 11. — Schiller Tires, Ltd., has been appointed Los Angeles and Hollywood distributor for Fisk tires. J. P. Schiller is president. A $1,000,000 franchise was signed by Schiller with G. Al Wood, Pacific Coast manager of the Fisk Tire Company, Inc. A long lease has been signed by the new company for the building at the southeast corner of Figueroa and 22d Street, comprising about 20,000 square feet of floor space and with a 100-foot frontage on Figueroa.

NEW ACCESSORY FIRM

Plant City, Fla., June 11.—C. B. Nichols Company, which proposes to deal in automobile accessories, has been incorporated. The board of directors is composed of E. B. Allen, W. N. Nichols and C. B. Nichols.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

MARSH AND ZACHARIAS TAKE OVER SERVICE STATION

Lansing, Mich., June 11.—Operation of the Capital Battery and Electric Company here has been taken over by Charles H. Marsh and J. Carl Zacharias, who have reopened the establishment as a completely equipped service station for motor car electrical trouble, washing, greasing and tire repairing. Zacharias was for eight years purchasing agent and head of the stock room for the E. F. Foster Company, Durant dealer here until last month.

Cumulative New Commercial Car Registration Statistics, May, 1931

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	FWD	Fargo	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Paige	Relay	Reo	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Delaware	4		41		2		1		1	41	1	12										1				3	107	Delaware
Illinois	3	5	429	36	71			1	3	641	18	137		13		3	6		5	1	26			14	1	39	1452	Illinois
Montana			32		3					76	6	30		1			5		1		1			2		2	159	Montana
Nor. Dak.		1	73		16					82	5	76					1				5		1	3			263	Nor. Dak.
So. Caro.			125		3					151	1	9	1	1			1				3					2	297	S. Carolina
S. Dakota			64	7	11					81		46				1	2	1			6						219	S. Dakota
Utah			55		4	1				74	4	9				1	4				1			1			154	Utah
W. Va.	1	3	150	1	25					155	3	25		2		1	5			1	5		5	8		1	391	W. Va.
Wiscon.			319	17	19		4		2	402	17	59		1	2		4	1	3	1	18		2	19		10	900	Wisconsin
D. of Col.	3		46	6	3	2			1	124	6	9		7		1	1						2			4	215	Dist. of C.
Totals	11	9	1334	67	157	3	5	1	7	1827	61	412	1	25	4	5	29	2	9	3	65	1	10	47	1	61	4157	Totals
Dela., '30	6	4	43	1	4	1				88	14	9		1			3	1		3				1			179	Dela., '30
Ill., 1930	4	11	661	71	61			12	4	911	36	135		18	3	2	19	1	2	5		13	12	15		78	2074	Ill., 1930
Mont., '30			63	1	9			5	1	97	6	32		8			4				2	2	5	2		1	238	Mont., '30
N. D., '30			86	6	7			5		113	7	68					11	1			1			2	1	3	311	N. D., 1930
S. C., '30		1	134		1					188	4	5		1			1				2	1	1			1	340	S. C., 1930
S. D., '30			99	3	5			1	1	84	1	44		1			11				1	2	1	3	1	1	259	S. D., '30
Utah, '30			73		8					132		5		2			7	3			1		2	1		5	239	Utah, '30
W.Va., '30		4	155	2	38	1		1	3	189	18	57	1	1	1		9	1		2	1			1		5	490	W. Va., '30
Wis., '30			449	37	27	1		4	7	563	29	96		3	1	3	24	1	14	7	4	6	3	10		23	1312	Wis., '30
D. C., '30	1	4	31	4	3	2			1	94	3	8		1	1		4					2	5				164	D. C., '30
Totals	11	24	1794	125	163	5		28	17	2459	118	459	1	36	6	5	93	8	16	17	11	27	29	35	2	117	5606	Totals

Cumulative New Commercial Car Registration Statistics, April, 1930

This table is repeated for comparative purposes only. April, 1931, figures will be found on Page 6.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	FWD	Fargo	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Paige	Relay	Reo	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Ala., 1930			280		10			1	2	197	6	17	2	3	1		3				1	1	3	3			530	Ala., 1930
Ariz., '30			51		11			2		80	3	7					2			1			1	1	1	3	163	Ariz., 1930
Ark., 1930			156		6				1	214	9	30		2			4						7	1		1	431	Ark., 1930
Cal., 1930			634	1	130	2	2	3	14	1511	78	80	26	35	1		123	10	23	8	17	5	31	4	2	132	2872	Cal., 1930
Col., '30			141		18				1	223	16	22					11					6	5	6		2	451	Col., 1930
Conn., '30	8	12	173	8	59	2		6	5	325	28	41		35	6		36	1	3	15	2	5	6	4	2	18	800	Conn., '30
Del., 1930	5	4	46		1			1		64	6	9	1				6						1			1	145	Del., 1930
Fla., 1930		2	122		9					230	7	10		1			4					1	6				392	Fla., 1930
Ga., 1930		5	147		2				5	252	8	8		3	1		2				2	3	7	1			446	Ga., 1930
Idaho, '30			67		9					123	7	17					4					1		1	1		230	Idaho, '30
Ill., 1930	8	20	663	54	72	2		9	19	932	41	111	1	17	3	2	26	2	5	7		14	12	13	1	79	2113	Ill., 1930
Ind., 1930		22	307	8	39	2		4	2	484	54	68		1	1	4	17			9	1	1	1	10	2	8	1045	Ind., 1930
Ia., 1930			480	2	39	3		4	3	506	12	343		1			22	1			1	3	5	25	2	2	1354	Iowa, '30
Kan., '30		1	487	2	46	2		8		433	12	66	2				21			7	1	3	10	11	1	4	1117	Kan., 1930
Ky., 1930		2	225	2	19			1		283	18	41	1	5		2	5	1			3	2		4	1	10	625	Ky., 1930
La., 1930			185		6			1		253	8	33		4			2						3	2			497	Louisiana
Me., 1930	2	12	309	3	38	3		4		422	10	23		4	1		13		2		3	4	1	12	3		869	Me., 1930
Md., 1930	19	12	218	8	29	1	2	3	2	312	25	62	2	22	1	1	24	1	1	3	1	2	25	2	1	11	790	Md., 1930
Mass., '30	29	34	317	21	102	10		14	10	905	78	87	1	59	3		58		24	19	3	6	35	2	1	31	1849	Mass., '30
Mich., '30	3	2	502	10	35	5		6	20	1119	59	97	7	2	10		38	4			1	9	12	8		19	1968	Mich., '30
Minn., '30		9	560	11	60	1		3	4	765	28	129		9			32				4	10	12	16	3	3	1659	Minn., '30
Miss., '30		1	330		19					329	6	25					5					3	1	2		2	723	Miss., '30
Mo., 1930		13	653	15	50	1		5	11	803	35	97		6	3	1	11	2	3	4	9	5	4	14	7	21	1773	Mo., 1930
Mont., '30			66		3			4		95	5	29		2			3					1	5	4	1	3	221	Mont., '30
Neb., 1930		1	249	4	16			1		310	15	51			1		7				1	3	1	11	1	3	675	Neb., 1930
Nev., 1930			11		2					23		1										1			1	2	41	Nev., 1930
N. H., '30		9	114	6	7					188	8	12	1	8			18		1	5	2		1	1			381	N. H., 1930
N. J., '30	19	18	348	17	97	8		6	10	788	59	41	1	38	9	2	31	2	9	5	7	7	18		2	42	1584	N. J., 1930
N. M., '30			30		3					47	3										1						84	N. M., 1930
N. Y., '30	39	189	1041	62	215	24	2	15	33	2081	168	235	3	150	9	18	108	2	26	117	8	15	82	18	10	93	4763	N. Y., 1930
N. C., '30			277		21					251	13	26	1	4			4	1				2	2	5		5	612	N. C., 1930
N. D., '30			112	1	9			1		144	2	77		1	1		11	1						11	2		373	N. D., 1930
Ohio, '30	16	30	651	7	96	6	1	9	13	1214	81	159		21	5	5	48	4	11	22	9	36	48	36	11	72	2611	Ohio, 1930
Ore., '30	2		121		10		7	1	9	310	14	16	1	5			5	3	4			2	7			8	525	Ore., 1930
Penn., '30	54	59	721	16	138	7		15	28	1455	100	190	4	84	9	16	60	5	15	68	6	18	49	25	5	54	3201	Penna., '30
R. I., 1930	1	2	60		15			1	10	126	18	10		6	1		3		1	1	3		1			2	261	R. I., 1930
S. C., '30			166		3			1	4	139	3	5		1			1						5	1		1	330	S. C., 1930
S. D., '30			79	1	9		1	2		90	2	44	1	2			12	1				3		6			253	S. D., '30
Tenn., '30		4	262	2	16				15	242	25	43	2	7			4				1	2	5	2			632	Tenn., '30
Texas, '30	1	4	895	1	41	1		10	1	929	30	146	1	12	3	2	43	1		2	2	8	15	9	1	6	2164	Texas, '30
Utah, '30			80		11	2	1			144	2	22		2			3				1					3	271	Utah, 1930
Vt., 1930		8	58	3	8			2	1	141	3	18		1			10			4		3	1	1		1	263	Vt., 1930
Va., 1930	4	6	422		24				4	396	20	31	7			1	9			7	1		12	6	1	1	952	Va., 1930
Wash., '30	1		152		18			3	6	411	29	25	1	2	1		3	3	4		2		18	1	1	42	723	Wash., '30
W. V., '30		3	205	4	34	1				245	17	44	1	1	1	1	15			2		2		3	1	6	586	W. V., '30
Wis., 1930		3	568	29	36	1	7	3	7	807	32	124		2	2	6	31	2	15	7	2	9	6	9	1	14	1723	Wis., 1930
Wyo., '30			18		2					49		4											1				74	Wyo., 1930
D. C., '30	5		17	2	3				1	85	13	1		1								1	6			1	136	D. C., '30
Totals	216	487	13776	300	1646	84	23	149	241	21475	1216	2677	67	559	73	61	898	47	147	313	95	197	471	291	66	706	46281	Totals

Major Specifications and Mechanical Details of 1931 Commercial Cars

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Cam-shaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
*Am. La France Chief	2½	3650	Own	L	6	3¾x5	331.0	33.7	65@2100	G	G & O	Borg	Spic	Ross	Str	Vac	DR	Own	4	Tim	Wo	31.2	B4IM	—	156	6200	32x6	32x6D
*Am. La France Chieftain	3-4	5500	Own	L	6	4½x5⅛	411.0	40.8	75@1800	G	G & O	Borg	Spic	Ross	Zen	Vac	DR	Own	4	Tim	Wo	28.8	B4IM	—	175	7200	36x8S	36x8D
Am. La France Big Chief	6	6725	Own	—	6	4½x6	——	48.6	50@1200	—	—	—	—	—	Zen	Vac	DR	Own	4	Own	2 R	32.8	——	—	226	10600	40x8S	40x8SD
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Tll	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	3.75x18	3.75x18
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	Sp	27.9	LO4ID	460	150	5060	34x7	34x7
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Br-L	4	Own	2 R	33.5	LO4ID	460	150	5300	34x7	34x7D
†Autocar SH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	114	6770	34x7	34x7D
Autocar SCH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	157	6860	34x7	34x7D
†Autocar H	3	4100	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar HS	3½	4600	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7900	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7900	40x8	40x8D
Autocar SCHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	54.3	O2IM	516	157	8180	40x8	40x8D
Autocar N	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	41.2	OL4IH	574	174	7900	36x8	36x8D
Autocar TFA	3-3½	5350	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.1	LO4ID	602	192	8900	36x8	36x8D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101.3	LO4ID	602	192	9300	38x9	38x9D
Autocar C	3½-5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	51.7	O2IM	516	172	9500	42x9	42x9D
Autocar F	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	94.0	LT4DV	674	173	11000	36x7S	40x8SD
*Autocar G	10	9000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100.0	T6IA	720	171	13000	36x8	36x8D
Autocar NA	22000	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	174	7990	36x8	36x8D
Autocar NB	22000	4700	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	192	8160	36x8	36x8D
Autocar NC	22000	4850	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	218	8320	36x8	36x8D
Autocar ND	22000	4950	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	—	—	Spic	——	Str	Vac	DR	—	4	Own	2 R	54.3	OL4IH	574	242	8480	36x8	36x8D
Brockway 60	*6000	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	3200	30x5	30x5
Brockway 65	6500	1195	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	G	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Brockway 75	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	G	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	244	137	3450	32x6	32x6
Brockway 90	9000	1525	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	G	G & O	Borg	Spic	Ross	Zen	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Brockway 120	12000	1990	Con	H	6	4 x4⅝	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Brockway 140	14000	2495	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	35.3	L4IHV	356	156	5500	32x6	32x6D
Brockway 141	17000	2935	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & G	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46 2	L4IHV	356	170	6200	32x6	32x6D
Brockway 170	17000	3160	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Brockway 175	17500	3660	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	—	Spic	Ross	Zen	P	Aut	—	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Brockway 195	19500	3820	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Brockway 190	19000	4185	Con	H	6	4¼x4¾	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	471	168½	7625	34x7	34x7D
Brockway 220	22000	4560	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Brockway 250	25000	5950	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IVA	664	182	10000	40x8	40x8D
Brockway 290	30000	7250	Con	L	6	4⅜x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Brockway 640	40000	9700	Con	L	6	4⅜x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
Chevrolet	½	355	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	1880	19x4.75	19x4.75
Chevrolet	1½	590	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	3015	30x5	30x5D
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	——	—	131	2700	30x5	32x6
Commerce Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	L4IH	297	142	3900	30x5P	30x5P
Commerce Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Commerce Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Commerce Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6P	32x6D
Commerce Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4900	32x6	36x6D
Commerce Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Commerce Series 60	2½	4580	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6P	36x6D
Commerce Series 60	3	4680	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7100	36x6P	38x7D
Commerce Series 80	3½	5250	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x6S
Commerce Series 80	4	5330	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Commerce Series 100	5	5830	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	—	175	9600	36x6S	40x14S
Day Elder 60	1	1095	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	B4IM	241	135	3200	20x6.00B	20x6.50B
Day Elder 85	1½	1645	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	42.3	L4IH	289	135	3750	20x6.00B	20x6.50DB
Day Elder 110	2	2095	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	44.9	L4IH	306	156	4600	20x7.00B	20x7.00DB
Day Elder 130	2½	2895	Con	H	6	4 x4½	311.0	38.4	73@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	40.7	L4IH	354	150	6400	20x7.50B	20x7.50DB
Day Elder 160	3	3695	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	36.1	L4IH	398	156	6600	20x7.50B	20x9.00DB
Day Elder 200	4	4295	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	43.5	L4IHV	489	156	7400	20x9.00B	20x9.00B
Day Elder 240	5	5500	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	50.8	L4IHV	520	162	9300	38x9P	38x9DP
*Day Elder 285	8	6000	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	71.2	L6IHV	674	164	12000	20x8.25B	20x8.25DB
*Day Elder 345	10	7500	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	79.9	T4rIA	490	164	12500	20x9.00B	20x9.00DB
*Day Elder 402	12	9000	Con	L	6	4⅜x5¾	611.4	54.2	127@2300	G	Per	Br-L	Blo	Ross	Zen	P	DR	Br-L	7	Tim	Wo	84.6	T4rIA	490	164	14000	20x9.75B	20x9.75DB
Diamond T 216	1½	695	Her	L	6	3⅜x4¼	228.0	27.3	56@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	252	135½	3130	20x6.50B	20x6.50B
Diamond T 291	1½-2	1325	Her	L	6	3½x4½	268.0	29.4	60@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IH	279	156¼	4500	20x6.50B	20x6.50DB
Diamond T 303	2-2½	1585	Her	L	6	3¾x4½	298.0	33.7	67@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IHV	350	159¾	5000	20x7.00B	20x7.00DB
Diamond T 551	2½-3	2050	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV	408	168	5600	20x7.50B	20x7.50DB
Diamond T 504	3	2375	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506	3	2675	Her	L	6	4¼x4½	383.0	43.3	85@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	2975	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606	3-4	3075	Her	L	6	4½x4¾	453.0	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4100	Her	L	6	4⅜x5¼	529.0	51.3	———	—	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W41	552	178	8300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	——	L6IHV	571	189½	8300	36x8P	36x8DP
*Diamond T 1290	6	5600	Her	L	6	4½x4¾	453.0	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11000	34x7P	34x7DP
*Diamond T 1600	8	6220	Her	L	6	4⅝x4¾	479.0	51.3	104@2400	G	G & O	Cov	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	190	11700	36x8P	36x8DP
*Diamond T 1601	8	7500	Wak	L	6	5 x5¾	677.4	60.0	127@2000	G	G & O	Br-L	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	T4IA	238	194	12500	36x8P	36x8DP
Dodge Bros. LF 10	½	515	Own	L	6	3¼x4¼	196.0	21.0	48@2800	G	Fed	Borg	Own	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	2050	19x5.00	19x5.00
Dodge Bros. F 10	½	695	Own	L	4	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	W-G	Car	P	DR	Own	3	Own	Sp	14.2	L4IH	114	109	2100	19x5.25	19x5.25
Dodge Bros. U 1	¾	435	Own	L	4	3⅜x4⅜	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	21.6	L4IH	189	124	2260	20x5.50B	20x5.50B
Dodge Bros. DA 1	¾	795	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	4	Own	Sp	36.8	L4IH	189	124	2360	20x5.50	20x5.50
Dodge Bros.	1	795	Own	L	4	3⅜x4¼	196.0	21.0	45@2800	C	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	36.1	L4IH	205	133	2590	20x6.00	32x6
Dodge Bros.	1	895	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	3	Own	Sp	33.4	L4TH	205	133	2690	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅜x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2750	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3⅜x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2925	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	23.4	66@3200	G	Fed	Borg	Cle	W-G	Car	P	DR	Own		Own	Sp	32.1	L4IH	229	165	2975	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	L4IH	120	136	2800	20x6.00	32x6
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	140	3975	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	G	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	L4IH	311	165	4175	20x6.00	20x6.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	150	5425	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	L4IH	350	165	5465	20x6.50	20x6.50D
Dodge Bros.	3	1845	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	L4IH	382	135	4235	32x6	32x6D
Dodge Bros.	3	1895	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	41.4	L4IH	382	165	4520	32x6	32x6D
Dodge Bros.	3	1945	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	L4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	48.8	L4IH	416	146	5835	32x6	32x6D
*Dodge Bros. F 61	3	2595	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	170	6075	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	L4IH	416	195	6190	32x6	32x6D
Essex Com.	¾	445	Own	—	6	2¾x4½	——	18.2	———	—	—	—	—	——	Mar	Vac	Aut	Own	3	Own	Sp	17.8	——	—	110	2125	30x5	31x5.50
Federal D	1½	795	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	131	3280	20x6.00	32x6
Federal E 6	1½	895	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	34.6	L4IH	377	132	3330	20x6.00	32x6
Federal F 7	1½	1525	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	414	132	3810	30x5	30x5D
Federal A 6	2	1855	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4635	32x6	32x6D
Federal A 6 T	2½	2185	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	41.3	L4IHV	659	151	5185	32x6	32x6D
Federal A 6 T W	2½	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	42.0	L4IHV	659	151	5185	32x6	32x6D
*Federal D S W	2½-3	1050	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3980	20x6.00	32x6
*Federal E 6 S W	2½-3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	4030	20x6.00	32x6
Federal T 10 B	2½-3	2740	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 W	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 D R	2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2 R	45.6	L4IHV	659	165	6645	34x7	34x7D
Federal U 6	3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	Wo	64.6	L4IHV	676	165	7315	34x7	34x7D
Federal U 6 D R	3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	2 R	69.6	L4IHV	767	165	7315	34x7	34x7D
Federal 4 C 6 A	4-5	4735	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A D R	4-5	4735	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	L4IHV	894	192	8460	36x8	36x8D
Federal 4 C 6 A B	4-5	4960	Con	H	6	4¼x4¾	381.0	40.8	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	72.2	T4IA	921	192	8980	36x8	36x8D
Federal 4 C 6 A B D R	4-5	4960	Con	H	6	4¼x4¾	381.0	45.9	90@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2 R	80.6	T4IA	921	192

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE EIGHT)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Transmission Make	No. Spds. For.	Rear Axle Make	Final Drive Type	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
General Motors T 42	*15000	1845	Buick	H	6	3 7/8 x4 5/8	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	Sp	33.4	54IM	524	141	4725	32x6P	32x6DP
General Motors T-44	*16000	2095	Buick	H	6	3 7/8 x4 5/8	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	2 R	40.9	B4IM	524	141	5005	34x7P	34x7DP
General Motors T-51	*19000	2565	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	Sp	40.6	B4IM	574	155	5955	34x7P	34x7DP
General Motors T-55	*19000	2690	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Eat	2 R	50.8	B4IM	574	155	6095	34x7P	34x7DP
General Motors T-60	*22000	3035	Buick	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Mun	4	Tim	Wo	52.5	B4IM	685	154	6925	34x7P	34x7DP
General Motors T-61	*22000	3445	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Mun	4	Tim	Wo	52.5	B4IMV	685	154	6965	20x9.00B	20x9.00DB
General Motors T-82	*24000	3795	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Mun	4	Tim	Wo	52.5	B4IMV	685	154	6965	20x9.00B	20x9.00DB
General Motors T-83	*24000	3990	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Mun	12	Tim	Wo	143.0	B4IM	793	155	7500	20x9.00B	20x9.00DB
General Motors T-85	*26000	5600	Own	H	6	4 1/4 x5 1/2	468.0	43.3	115@2200	C	Long	Own	Spic	Sag	Str	P	Dr	Mun	12	Tim	Wo	143.0	B4IMV	865	155	7670	20x9.00B	20x9.00DB
†General Motors T-90	*28000	5285	Own	H	6	3 3/4 x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Ful	4	Tim	2 R	53.3	B4IMV	865	171	10630	20x9.75B	20x9.75DB
†General Motors T-95	*34000	7545	Own	H	6	4 1/4 x5 1/2	468.0	43.3	115@2200	C	Long	Own	Spic	Sag	Str	P	DR	Mun	12	Tim	Wo	129.0	BrIA	868	185	9400	20x7.50B	20x7.50DB
†General Motors T-96	*34000	7195	Own	H	6	4 1/4 x5 1/2	468.0	43.3	115@2200	C	Long	Own	Spic	Sag	Str	P	DR	Ful	4	Tim	Wo	53.3	B6IA	1191	189	13250	34x7P	34x7DP
Gramm A X 4	1	795	Con	L	4	3 1/8 x4	200.4	24.0	50@2800	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3300	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3 1/8 x4	214.0	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3550	20x6.00	20x6.50
Gramm B X 4	1½	895	Con	L	4	3 7/8 x4 1/4	200.4	24.0	50@2800	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3475	20x6.00	20x6.00D
Gramm B X 6	1½	995	Con	L	6	3 1/8 x4	214.7	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3725	20x6.00	20x6.00D
Gramm B	1¾	1495	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2900	G	Per	Own	Blo	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	278	140	4150	20x6.50	20x6.50D
Gramm C	2	1795	Lyc	L	6	3 5/8 x4 1/2	278.6	31.5	82@2600	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	160	4800	20x7.00	20x7.00D
†Gramm C X	2	1095	Con	L	4	4 1/8 x4 1/4	227.0	27.2	55@2600	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3900	20x6.50	20x6.50D
Gramm C X	2	1295	Con	L	6	3 1/8 x4 3/8	248.2	27.3	70@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm D	2½	1995	Lyc	L	6	3 3/4 x4 1/2	299.0	33.7	90@2200	G	Per	Jon	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm E	3	2595	Lyc	L	6	3 7/8 x5	353.8	36.0	90@2200	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm E Y	3	3595	Con	H	6	4 1/8 x4 3/4	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	35.0	L4IHV	659	160	5950	20x8.25	20x8.25D
Gramm G Y	4	4345	Con	H	6	4 3/8 x4 3/4	428.4	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	30.0	L4IHA	—	190	7200	20x7.50	20x7.50D
Gramm G W	4	5175	Con	H	6	4 3/8 x4 3/4	428.0	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	28.0	BW4IM	—	210	7700	20x8.25	20x8.25D
Gramm H Y	5	6545	Con	L	6	4 3/4 x5 3/4	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	4IA	864	157	9500	20x9.00	20x9.00D
																	Aut	Ful	4	Wis	2 R	25.2	4IA	—	236	10100	36x8	36x8D
Indiana 60	*6000	995	Con	L	6	3 3/8 x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	3	Col	Sp	19.8	B4IM	297	132	3200	30x5	30x5
Indiana 64	6500	1195	Con	L	6	3 3/8 x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	3400	30x5	30x5
Indiana 74	7500	1290	Con	L	6	3 3/8 x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	21.3	C4IM	244	137	3450	32x6	32x6
Indiana 89	9000	1525	Con	L	6	3 3/8 x4 5/8	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	190	137	3450	32x6	32x6
Indiana 111 XW	12500	1850	Her	L	4	4 x5	251.3	25.6	46@2000	G	McG	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Indiana 120	12000	1990	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	35.2	K2IM	270	120	3740	32x6	32x6D
Indiana 140	14000	2495	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5200	32x6	32x6D
Indiana 141	17000	2935	Con	H	6	4 x4 1/8	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	35.3	54IHV	356	156	5500	32x6	32x6D
Indiana 170	17000	3160	Con	H	6	4 1/8 x4 3/4	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	380	170	6200	32x6	32x6D
Indiana 175	17500	3660	Con	H	6	4 3/8 x4 3/4	427.5	45.9	100@2400	C	G & O	——	Spic	Ross	Str	P	Aut	——	5	Wis	2 R	46.6	L4IHV	380	170	6800	32x6	32x6D
Indiana 185	19500	3820	Con	H	6	4 1/8 x4 3/4	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	——	5	Wis	2 R	45.3	L4IHV	380	170	7200	34x7	34x7D
Indiana 190	19000	4185	Con	H	6	4 1/8 x4 3/4	380.9	40.8	89@2400	C	Long	Borg	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	7500	34x7	34x7D
Indiana 220	22000	4560	Con	H	6	4 3/8 x4 3/4	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Str	P	Aut	Br-L	7	Tim	Wo	78.6	T2IMV	500	168½	7625	34x7	34x7D
Indiana 250	25000	5950	Con	H	6	4 3/8 x4 3/4	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8200	36x8	36x8D
Indiana 290	30000	7250	Con	L	6	4 3/8 x5 3/4	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	93.7	LT4IHV	664	182	10000	40x8	40x8D
*Indiana 640	40000	9700	Con	L	6	4 3/8 x5 3/4	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
																	L-N	Br-L	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
International A W 1	¾	650	Wak	L	4	3 1/2 x4 1/2	173.0	19.6	30@2700	G	Mod	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	17.4	B4IM	212	136	2620	20x5.25	20x5.25
International Sp. Del.	¾	675	Wak	L	4	3 1/2 x4 1/2	173.0	19.6	30@2700	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Eat	Sp	60.3	BE4IM	256	124	2200	30x5.25	30x5.25
International 6 Sp. Spec.	1	675	Wak	L	4	3 1/2 x4 1/2	173.0	19.6	30@2700	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Eat	Sp	52.6	BE4IM	292	124	2420	30x5	30x5
International S 24	1¼	1160	Lyc	L	4	3 3/8 x5	220.9	22.5	43@2350	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	21.3	B4IM	346	130	3200	30x5	30x5
International S 26	1¼	1310	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	21.3	B4IM	346	130	3250	30x5	30x5
International A W 2	1½	675	Wak	L	4	3 1/2 x4 1/2	173.0	19.6	30@2700	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	21.3	B4IM	346	130	3250	30x5	30x5
International S F 34	1½	1450	Lyc	L	4	3 3/4 x5	221.0	22.5	43@2350	G	Long	Rock	Mec	Ross	Zen	Vac	DR	Mec	3	Own	Sp	60.3	BE4IM	492	136	2980	20x5.50	20x6.00
International A L 3	1½	1450	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	DR	Own	3	Eat	Sp	22.6	BE4IM	346	140	3520	30x5	32x6
International S F 36	1½	1600	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM	295	138	4300	20x6.00	20x6.00D
International A 2	1½	675	Wak	L	4	3 5/8 x4 1/2	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Own	3	Eat	Sp	22.6	BE4IM	346	140	3570	30x5	32x6
International B 2	1½	675	Wak	L	4	3 5/8 x4 1/2	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	2800	5.50x20	6.00x20
International S D 44	2	1590	Lyc	L	4	3 3/4 x5	221.5	22.5	43@2350	G	Long	Own	Mec	Col	Zen	Vac	DR	Mec	3	Own	Sp	47.3	BE4IM	212	136	2830	5.50x20	6.00x20
International S D 46	2	1740	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	AB	Own	4	Eat	Sp	40.6	BE4IM	421	117	3700	30x5	32x6
International S F 46	2	1950	Lyc	L	6	3 1/4 x4 1/2	224.0	25.3	61@2800	G	Long	Own	Mec	Col	Zen	Vac	AB	Own	4	Eat	Sp	40.6	BE4IM	421	117	3750	30x5	32x6
International A 4	2	1860	Own	H	6	3 5/8 x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Eat	Sp	40.6	BE4IM	421	140	4000	32x6	32x6D
International H S 54	2½	3850	Hall	H	4	4 1/4 x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	DR	Own	5	Own	Sp	47.8	BE4IM	378	145	5070	32x6	32x6D
International H S 54 C	2½	3850	Hall	H	4	4 1/4 x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Eat	2 R	60.5	BE4IM	726	148	8000	36x5S	36x8S
International W 1	2½	3850	Hall	H	4	4 1/4 x5 1/2	312.0	28.9	54@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	Cn	63.8	BO4IM	732	148	8665	36x5S	36x10S
International A 5	3	2550	Own	H	6	3 5/8 x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	2 R	60.5	BE4IM	710	148	8300	36x5S	36x8S
International A 6	3	2675	Own	H	6	3 5/8 x4 1/2	279.0	31.5	65@2800	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	430	156	5606	34x7	34x7D
International H S 74	3½	4850	Hall	H	4	4 3/4 x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	DR	Own	5	Own	Sp	62.5	BE4IM	430	156	5750	34x7	34x7D
International H S 74 C	3½	4850	Hall	H	4	4 3/4 x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Eat	2 R	70.5	BE4IM	850	160	10700	36x5S	40x12S
International W 3	3½	4850	Hall	H	4	4 3/4 x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	Ch	79.1	BO4IM	736	160	11000	36x6S	40x12S
International H S 104 C	5	5500	Hall	H	4	4 3/4 x5 1/2	390.0	36.1	60@1800	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2 R	70.5	——	—	160	10125	36x6S	40x12S
																	RB	Own	5	Own	Ch	90.5	BO4IM	736	160	11095	36x6S	40x14S
La France Rep. A 1	6000	795	Lyc	L	6	3 x4 3/4	201.5	21.5	60@2500	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	—	132	3000	20x5.50	32x6
La France Rep. C 1	7500	1295	Lyc	L	6	3 1/4 x4 1/2	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	29.1	L4IH	—	144	3300	20x6.00	32x6
La France Rep. D 1	9000	1595	Lyc	L	6	3 1/4 x4 1/2	224.0	25.4	61@2750	G	G & O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	37.9	L4IH	—	144	3725	30x5	30x5D
La France Rep. F-3	13000	2395	Lyc	L	6	3 3/4 x4 1/2	299.0	33.7	80@2500	G	Per	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	40.1	L4IHV	—	174	5520	34x7	34x7
La France Rep. H 2	16000	2985	Lyc	L	6	3 7/8 x5	354.0	36.0	85@2100	G	Per	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Wis	2 R	41.6	L4IHV	—	174	6370	34x7	34x7D
La France Rep. M 2	20000	4000	Wak	L	6	4 3/8 x5 1/2	462.0	46.0	97@2000	G	Per	Ful	Spic	Hen	Zen	Vac	Aut	Ful	5	Wis	2 R	46.1	L4IHV	—	174	7500	36x8	36x8D
La France Rep. 35-2	24000	5600	Wak	L	6	4 1/2 x5 3/4	549.0	48.6	98@1850	G	Own	Ful	Spic	Han	Zen	Vac	Aut	Ful	4	Wis	2 R	45.4	L4JHV	—	174	8250	38x9	38x9D
Maccar 36 A	1½	1900	Bud	L	6	3 3/4 x4 1/2	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	31.1	L4W	315	171	4850	32x6	32x6D
Maccar 40 A	2	2400	Bud	L	6	3 3/4 x4 1/2	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	40.6	L4W	365	171	5340	32x6	32x6D
Maccar 56	3	3350	Bud	L	6	3 3/4 x5	311.0	33.7	72&2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Wis	2 R	34.5	L4W	380	183	6200	34x7	34.7D
Maccar 66 A	4	5500	Her	L	6	4 5/8 x4 3/4	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	37.2	L4W	377.5	183	6600	20x9.00	20x9.00D
Maccar 86 A	5	5950	Her	L	6	4 5/8 x4 3/4	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	86.7	4 A	617.5	206	8200	20x9.75	20x9.75D
																	DR	Br-L	7	Tim	Wo	85.0	4 A	623	206	9500	20x10.50	20x10.50D
Mack B L	1½	2500	Own	L	6	3 3/4 x5	248.9	25.3	63@2800	G	Own	Own	Spic	Gem	Str	Vac	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	4450	20x6.00B	20x6.00DB
††Mack B G	2	3000	Own	L	6	3 5/8 x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Sp	Opt	O4IV	415	156	5200	32x6	32x6D
Mack A B	2½-3	4350	Own	L	4	4 1/4 x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7100	34x7	34x7D
††Mack A B	2½-3	4000	Own	L	4	4 1/4 x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	9850	34x7	34x7D
Mack A B	2½-3	4500	Own	L	6	3 5/8 x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7050	34x7	34x7D
††Mack A B	2½-3	4150	Own	L	6	3 5/8 x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
††Mack B C	3-4	5250	Own	L	6	4 x5 1/2	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	2 R	Opt	O4IV	610	154	8350	36x8	36x8D
††Mack B J	3½-5	5500	Own	L	6	4 x5 1/2	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	610	154	9500	36x8	36x8D
††Mack A K	3½-5	6150	Own	L	6	4 1/2 x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	567	168½	10100	36x8	36x8D
	3½-5	5150	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	O4IV	492	162	9800	36x5S	36x5DS
††Mack A K	3½-5	5250	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	2 R	Opt	O4IV	492	162	9700	36x5S	36x5DS
††Mack A C	3½-5	4950	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	9500	36x5S	40x5DS
††Mack A K	3½-5	6450	Own	L	6	4 1/2 x5 1/2	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	492	174	10950	22x10.50B	22x10.50DS
††Mack A C	5½-7	5500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10100	36x6S	40x6DS
††Mack A C	5½-7	6550	Own	L	6	4 1/2 x5 1/2	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	Ch	Opt	O4IV	492	174	11950	24x10.50B	24x10.50DS
††Mack A P	7½	6000	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10450	36x7S	40x7DS
Mack A K 6—6 wheel	——	9500	Own	L	6	4 1/2 x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Cn	Opt	O2IV	287	191	12200	36x7S	40x8DS
††Mack A C 6 wheel	10	7500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	ORIV	574	152	16300	9.75x22B	5.75x22DB
Mack A C 6—6 wheel	——	8700	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	ORIV	574	125	13800	36x6S	40x12S
††Mack A P 6 wheel	10	12000	Own	L	6	4 1/2 x5 1/2	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	ORIV	574	145	14950	9.75x22B	9.75x22DB
					6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	ORIV	574	145	15250	36x7S	40x12S
Paige	½	*895	Own	L	6	3 1/4 x4 1/2	224.0	23.4	70@3200	C	Long	Long	Un	Ross	DL	F	DR	——	3	——	Sp	14.2	4IH	187	115	2350	18x5.50B	18x5.50B
Pierce-Arrow P T	2	2950	Own	L	6	3 3/4 x4 1/2	298.0	33.5	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	——	B4IMV	388	160	5600	20x7.50B	20x7.50B
Pierce-Arrow P W	3	4150	Own	L	6	4 1/8 x4 1/2	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	488	150	6660	20x9.00B	20x9.00B
Pierce-Arrow P X	4	5375	Own	L	6	4 5/8 x4 3/4	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	——	W4IA	610	160	9300	20x10.50B	20x10.50B
Pierce-Arrow P Y	5	5950	Own	L	6	4 5/8 x4 3/4	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	*Wo	——	W4IA	701	160	10675	24x10.50B	24x10.50B
Pierce-Arrow P Z	8	6950	Own	L	6	4 3/4 x5 3/4	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	168	12800	36x7B	40x16B
Relay Series 15 AA	¾	1370	Con	L	6	3 3/8 x4	214.7	27.3	52@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2R	36.4	L4IH	297	131	3750	30x5P	30x5P
Relay Series 15 AB	1	1400	Con	L	6	3 3/8 x4	214.7	27.3	52@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2R	36.4	L4IH	297	131	3800	30x5P	30x5P
Relay Series S 11	1	1700	Bud	L	6	3 3/8 x4 1/2	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2R	25.5	L4IH	297	142	4050	30x5P	30x

Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE NINE)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Rear Axle Type	Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Standard Tire Sizes Rear
Selden 67 C	6	4975	Con	H	6	4⅜x4¾	427.0	45.9	100@2400	C	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	L4IHVA	—	171	8700	36x8	36x8D
Selden 77	7	7365	Con	L	6	4¾x5⅜	611.0	54.1	127@2300	G	Own	Br-L	Spic	Ross	Str	Vac	Aut	Br-L	7	Wis	2R	——	BW41M	—	178	11600	40x8	42x9D
Service Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	——	—	142	3900	30x5P	30x5P
Service Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4390	30x5P	30x5DP
Service Series 40	1½	2990	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Service Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6	32x6D
Service Series 40	2	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Service Series 40	2½	3240	Bud	L	6	3⅝x5	309.6	31.5	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 60	2½	4580	Bud	L	6	4¼x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	53.0	L4IH	584	175	7000	36x6	36x6D
Service Series 60	3	4680	Bud	L	6	4¼x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	——	—	175	7100	36x6	38x7D
Service Series 80	3½	5250	Bud	L	6	4¼x5⅛	411.0	40.8	83@2100	G	Long	Borg	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x12S
Service Series 80	4	5330	Bud	L	6	4¼x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Service Series 100	5	5830	Bud	L	6	4¼x5⅛	410.9	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	—	175	9600	36x6S	40x14S
Sewart 30	1	695	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	25.1	B4IM	. .	130	3158	20x6.50	20x6.50
Stewart 30X	1	795	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	25.1	B4IM	. .	130	3199	20x6.50	20x6.50
Stewart 40	1½	895	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	. .	130	3531	20x6.50	20x6.50D
Stewart 40 X	1½	995	Lyc	L	6	3 x4½	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	. .	130	3874	20x6.50	20x6.50D
Stewart 34 X	2½	1195	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	. .	145	3891	20x6.50	20x6.50D
Stewart 28 X	2	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	. .	136	4239	20x6.50	20x6.50D
Stewart 29 X S	2	1695	Lyc	L	6	3¼x4½	224.0	25.3	61@2600	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	. .	145	5194	32x6	32x6D
*Stewart 18 X	2½	2690	Lyc	L	6	3⅝x5	310.0	31.5	85@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	4	Tim	Wo	46.1	B4IM	. .	165	6345	32x6	32x6D
Stewart 32 X	2½	1990	Lyc	L	6	3⅜x4½	278.0	31.5	80@2500	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	. .	165	5552	32x6	32x6D
Stewart 35 X	3	2590	Lyc	L	6	3⅜x4½	299.0	33.8	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	. .	165	6724	20x8.25B	20x8.25D
Stewart 36 X	3	2990	Lyc	L	6	3⅝x5	354.0	36.2	90@2750	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	4	Tim	Wo	105.1	——	. .	165	6864	20x8.25	20x8.25D
Stewart 38-8	2½	3990	Lyc	L	8	3⅜x4¾	462.0	44.4	130@2800	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	——	. .	170	7964	20x9.00	20x9.00D
Stewart 38-6	3½	3990	Wak	L	6	4⅜x5⅛	420.0	45.9	100@2000	G	Fed	—	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	——	. .	170	7964	20x9.00	20x9.00D
Stewart 19 X	3½	3690	Lyc	L	6	3⅝x5	354.0	36.2	90@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	105.1	B4IM	. .	165	7474	34x7	34.7D
Stewart 31 X	5	4990	Wak	L	6	4⅜x5⅛	462.0	45.9	100@2000	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	. .	165	9885	36x6S	36x68D
Stewart 27 X	7	5700	Wak	L	6	4⅜x5⅛	462.0	45.9	100@2000	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	8	Tim	Wo	105.1	B4IMV	. .	165	10512	36x7	40x7D
Studebaker S-1	½	595	Own	L	6	3¼x4½	221.0	27.3	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	3	Own	Sp	16.4	B4IM	148	114	2897	19x5.25	19x5.25
Studebaker S-20	1½	695	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	130	3044	20x6.00	32x6
Studebaker S-30	1½	775	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	36.2	B4IM	224	160	3199	20x6.00	32x6
Studebaker S-40	2	945	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Spic	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	136	3825	20x6.50	20x6.50D
Studebaker S-50	2	895	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	148	3855	20x6.50	20x6.50D
Studebaker S-60	2	945	Own	L	6	3¼x4½	205.0	25.4	70@3200	C	McC	Long	Cle	Ross	Str	P	DR	W-G	4	Tim	Sp	37.4	B4IM	276	146	3265	20x6.50	20x6.50D
Studebaker GN-N	——	1245	Own	L	6	3¼x4½	221.0	27.3	70@3200	C	—	Long	—	Ross	Str	P	DR	Cla	4	Cla	Sp	33.5	B4IM	348	160	3909	30x5	32x6
Studebaker 88	——	3295	Own	L	8	3½x4¾	327.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	444	184	5200	20x7.50	20x7.50D
Studebaker 99	——	3795	Own	L	8	3½x4¾	337.0	39.2	115@3200	G	Long	Long	Spic	Ross	Str	P	DR	Ful	4	Eat	Sp	24.6	B4IMV	505	184	5680	20x7.50	20x7.50D
White 16B	*7,500	1545	Own	L	4	3¾x5⅛	226.4	22.5	31@1600	G	Own	Own	Spic	Own	Zen	Vac	L-N	Own	4	Own	Sp	18.6	O2XM	226	133½	3402	30x5	30x5
White 160	*8,000	1700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4025	30x5	30x5
White 60	*8,000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	Own	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.8	L4IH	276	138	3739	30x5	30x5D
White 161	*9,000	1850	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4290	34x7	34x7
White 162	*10,000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4260	30x5	30x5D
White 210	*10,000	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	22.4	L4IH	349	148	4875	30x5	30x5D
White 61	*10,500	2450	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	Own	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4789	30x5	30x5D
White 611	*11,500	2550	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4880	20x7.00B	20x7.00DB
White 211	*11,500	2425	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5110	32x6	32x6D
White 212	*13,000	2700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	24.4	L4IH	349	148	5230	34x7	34x7D
White 56	*13,000	3125	Own	L	4	4 x5¾	289.0	25.6	45@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	26.2	O2IM	268	165	5276	36x4	36x7
White 612	*13,000	2800	Own	L	6	3¾x4½	299.0	33.7	61@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5100	20x7.50B	20x7.50DB
White 629	*15,000	4350	Own	H	6	4 x5¼	396.0	38.4	72@1800	G	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	O14IHV	—	157	7300	20x8.25B	20x8.25DB
White 51A	*17,000	3750	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	46.6	O2IM	335	170	6438	36x5	36x8
White 51AT	*17,000	3875	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Ross	Zen	Vac	Eis	Own	4	Own	Sp	46.6	O2IM	335	134	6227	36x5	36x8
White 621	*18,000	4650	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	—	157	7700	20x9.00B	20x9.00DB
White 649	*20,000	6100	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	—	180	9200	20x9.00B	20x9.00DB
White 630	*20,000	5000	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	554	168	8500	20x9.00B	20x9.00DB
White 55	*21,500	4650	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	66.1	OPXM	224	174	8737	36x5	40x5D
White 58	*22,000	4400	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x5D
White 641	*24,000	6450	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	—	180	9700	20.9.75B	20x9.75DB
*White 630 SW300	*24,000	6280	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	44.2	OT1HV	—	193	10000	20x8.25B	20x8.25DB
White 631	*24,000	5750	Own	H	6	4 x5¼	396.0	38.4	72@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	—	168	9000	20x9.25B	20x9.25DB
White 52	*28,000	5100	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	58.4	OPXM	224	174	9409	36x6	40x12
White 52T	*28,000	4700	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	76.5	OPXM	224	129½	8461	36x5	40x5D
White 643	*32,000	6950	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10900	24x10.50B	24x10.50DB
*White 642 SW310	*34,000	8045	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OT1HV	—	198	12670	20x9.00B	20.9.00DB
White 642	*34,000	6750	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40,000	8570	Own	H	6	4⅜x5¾	519.0	45.9	96@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	79.9	OT1HV	—	198	14400	40x8	40x8D
**White 60K	——	2200	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	17.6	L4IH	276	112	3200	20x7.00B	20x7.00B
White 601	——	1900	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	3625	20x7.00B	20x7.00B
White 602	——	2050	Own	L	6	3½x4½	260.0	29.4	50@1800	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4125	20x7.50B	20x7.50B
Willys 6-C-113	½	395	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	147	113	1872	19x5.00	19x5.00
Willys 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	232	131	2625	20x5.50	32x6
Willys 6-C-157	1½	630	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Borg	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	232	157	2900	20x5.50	32x6

GENERAL NOTATIONS

REFERENCE MARKS apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

CHASSIS WEIGHT—Unless otherwise specified includes gas, water, oil, etc.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall American Car & Foundry.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; T, T head.

TYPE OF CAMSHAFT DRIVE G, gear; C, chain.

RADIATOR MAKE—G & O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM—AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain, S-T, semi-transverse.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

TYPE OF SERVICE BRAKES—B4IM, Bendix, 4 wheel, internal mechanical; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel, internal mechanical, vacuum; Br1A, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal mechanical; BO4IM, Bendix front own rear, 4 wheel internal mechanical; B4IH, Bendix, 4 wheel, internal hydraulic; B4, Bendix, 4 wheel.

C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LT4DV, Lockheed Timken, 4 wheel, drive shaft; vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHV, Lockheed, 4 wheel, internal, hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; O4XM, Own, jack shaft, external, mechanical; OL4IH, Own, Lockheed, 4 wheel, internal, hydraulic; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air. 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

*Chief model also available as 2½-ton model, 34x7 tire, dual rear; weight, 6,400. Price, $3,900.

Chieftain model also available as dump truck, 160-inch wheel base.

Balloon tires optional on Chief, Chieftain and Big Chief models.

AUTOCAR

*Engines in these models are located under the driver's seat.

BROCKWAY

*Six-wheelers

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,730 pounds and equipped with dual rear wheels.

DAY ELDER

*Six-wheeler

Additional standard wheel bases are available on different models as follows:

85.....146, 168	240.....204		
110.....163, 186	285.....204		
130.....165, 180, 204	345.....204		
160.....165, 180, 204	402.....204		

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

DIAMOND T

*Six-wheelers.

Additional standard wheel bases available as follows:

551.....158	750.....167, 192		
504.....166½	801.....180½, 199¼		
506.....174	1200.....174½, 180		
403.....157, 179	1600.....174½, 180		
506.....177½	1601.....184		

F. W. D.

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

FEDERAL

*Six-wheelers.

†Solid tires standard, no spare rim or tire.

GRAMM

Series	Straight Rating	Wheel Base		Pay Load Range
AX 4	8,000	157	1	to 1½ tons
AX 6	8,000	157	1	to 1½ tons
BX 4	10,000	157	1½	to 2 tons
BX 6	10,000	157	1½	to 2 tons
CX 4	12,000	157-180	2	to 3 tons
CX 6	12,000	157-180	2	to 3 tons
B	12,000	157-174	1¾	to 2½ tons
C	14,000	145-196	2	to 3 tons
D	17,000	145-196	2½	to 4 tons
E	20,000	145-196	3	to 4½ tons
EY			3	to 4 tons
GV			4	to 5 tons
GW	28,000	157 240	5	to 7½ tons
HY			5	to 6½ tons

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

FORD

Chassis weight given does not include gas, water, oil, etc.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis, body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follows:

Note: Models T-15 to T-80, inclusive, are available for export only as coupe chassis.

Model	Wheel Bases	Tire Types	Range of "Rec. Gross Weights"	Pay Load Range
T-11	1	1	3800	½
T-15	3	10	4500- 6600	½-1½
T-17	2	8	5500- 6500	1-1½
T-19	3	22	6500- 8500	1½-2
T-25	3	17	6800- 9000	1½-2
T-26	4	..	8500-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
T-42	1	12	12000-15000	2½-4
T-44	1	12	12900-16000	3-4½
T-51	4	..	16500-19000	4-5½
T-55	4	..	16500-19000	4-5½
T-80	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-24000	5-7
T-85	3	..	22000-26000	5-7
T-90	3	7	22000-26000	5-7½
T-95	3	..	28000-34000	7-9
T-96	3	..	28000-34000	7-9

‡Models T-90, T-95 and T-96 are six-wheelers, the latter having one driven and one trailing axle. Optional rear axle gear ratios available for all models. Double reduction axles available for Models T-60, T-61 and T-82.

INDIANA

*Six-wheelers.

MACK

Other wheel bases furnished on all truck models.

On 6-wheel jobs 4 rear wheels driven by chains, foot brake on 4 rear wheels.

‡‡Made also in tractor models.

PAIGE

*Price includes panel or screen body. Chassis weight given does not include gas, water, etc.

PIERCE-ARROW

*Optional final drive on Models PW, PX, PY and PZ.

REO

Model 15 Junior can be had with 4-speed transmission at additional cost. Models 15 Junior, DF 129, DP, FA, FE and FP are available with dual wheels at additional cost.

SELDEN

Additional standard wheel bases are available on different models as follows:

Model 37C.....	162 and 181
39C.....	177 and 190½
47CB, 47CD..	151, 164 and 184
67C.....151, 164, 184 and 198	

STEWART

Models 30 and 30X can also be supplied in 110, 120 and 140-inch wheel base.

Models 40 and 40X can also be supplied in 110, 140 and 160-inch wheel base.

*Models 34X can be supplied in 135, 145, 160 and 176-inch wheel base.

Model 28X can be supplied in 130, 145, 160 and 176-inch wheel base.

Model 29XS can be supplied in 135, 160 and 176-inch wheel base.

*Models 18X, 32X and 36X can be supplied in 148, 190 and 220-inch wheel base.

*Models 19X, 31X and 27X can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment Models 18X, 19X, 36X, 31X and 27X can be supplied with Timken dual reduction rear axle.

Models 38-8 and 38-6 can be supplied in 196, 226 and 241-inch wheel base and worm axle.

STUDEBAKER

*Capacity Model GN-N is 4,000 pounds for body, cab, driver and pay load.

Maximum gross load, chassis, body and pay load for Models 77 and 88 is 13,500 pounds and for Model 99 is 14,000 pounds.

‡Hand brake same as foot brake, standard. Hand brake on drive shaft, special equipment.

WHITE

*Six-wheelers.

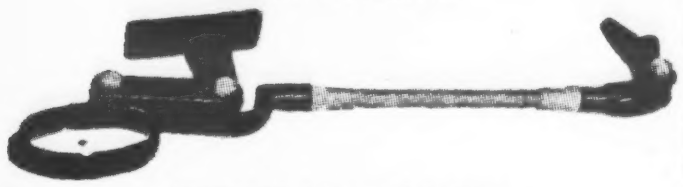
**Price on Model 60K includes body.

GARAGE GROUP PLANS ACTIVE CAMPAIGN

Jersey City, N. J., June

Production--Engineering--Factory

Eberhard Door Control For Buses



EBERHARD door control for buses

A new door control for use on buses is announced by Eberhard Manufacturing Company, Cleveland, O. The control, it is stated, permits easy operation of a large door by a swing on a radius of four inches while the hand of the operator moves eight inches. It is self-adjustable in installation. The offset in the handle arm permits the rod to move past center, and the end of the dash bracket provides the stop regardless of the angle at which the rod is attached to the door.

The company will announce an improved door-locking device for refrigerator truck bodies in the near future.

BROOKINS ADDS FOUR NEW PRODUCTS

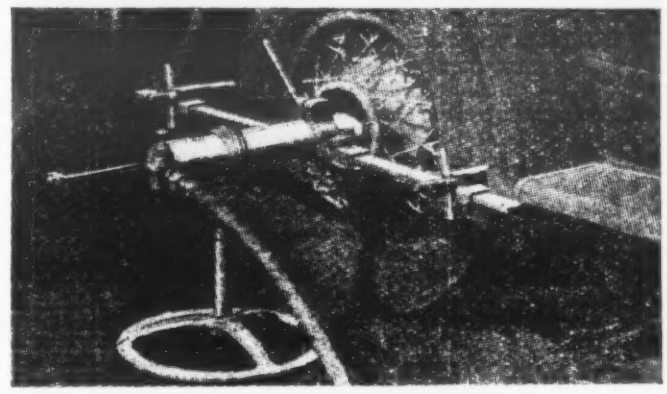
Four new products have been added to the line of the Brookins Manufacturing Company, Dayton, O. —Brookoil hydraulic shock-absorber oil No. 100, hydraulic shock-absorber fluid No. 200, brake fluid No. 300 and break-in fluid No. 400.

The No. 100 oil is a refined mineral oil for use in hydraulic-type shock absorbers, but should not be used in the Houdaille type; the No. 200 fluid, which is not an oil, is a blended fluid for use in the Houdaille type.

The No. 300 brake fluid is said to prevent rust and corrosion.

The break-in oil is penetrating oil for assisting ordinary lubricating oils in breaking in engines. It is also intended for use for upper-cylinder lubrication.

Chicago Rivet Develops Pneumatic Wheel Puller



CHICAGO pneumatic wheel puller

After a year of testing, the Chicago Rivet and Machine Company is now marketing its pneumatic universal wheel puller, which features ease of attachment and operation without shock to the bearings. Universal arms fit all wheel sizes. The piston rod is set into the piston with a spring bumper, a slot being provided in the end of the cylinder for observing the result of blow on the axle. Generally one blow of the piston rod removes wheel, but in difficult conditions two or more blows may be required to free badly frozen wheels.

The piston rod is released by placing the finger under the base of the release valve, with base of thumb on top of the valve, squeezing valve at moment of release. It operates at 150-pound pressure.

Attachment for handling Model A Ford cars and AA truck and dual wheels are included in regular equipment. No other attachment is necessary.

The price with complete equipment is $60.

Evolution in Motor Car Body Development

By ALEXIS DE SAKHNOFFSKY*

The problems and difficulties of automobile coach-building which we noted a year ago have done nothing but increase and become more complicated since that time. On one hand, the current style demands that doors should be ever wider and wider, but will have nothing more to do with fabric-covered bodies which would reduce weight. On the other, the public, becoming more and more exigent, has reached the point of insisting that bodies shall be absolutely silent. It, therefore, became necessary for body builders and body engineers to consider more seriously than ever any new possibilities for improvement in this direction. In the past we generously commended the tendency to eliminate as far as possible the use of wood. This tendency is becoming more and more definite.

During a visit to several body building plants on the Continent we were pleased to note that, for the reinforcement of body frames, preference is given to the use of heavier and longer corner irons, corner plates and tee irons rather than to increase in the slightest degree the section of the vertical and horizontal wood members. This is moving in the right direction. It may be interesting to give a plausible explanation of this development. Only a short time back, when closed bodies on very small chassis were popular, body builders found it a comparatively simple matter to obtain with this type of body relatively perfect silence. This is due to the fact that the top frame, attached to the side panels by a certain number of uprights and a rigid back panel, constitutes a strong unit which does not permit the deformation which throws doors out of adjustment and with resulting noises of many kinds.

The tendency to reducing weight and the popularity of fabric-covered bodies, and those builders who attempted to apply light construction principles to this type will not soon forget the difficulties which followed.

It is not difficult to understand, in a body where there are only the front member, the central posts, either with or without the partition, and a back panel, the whole structure separated by the wide door openings, that wood alone is not strong enough to hold the body together.

One was obliged to reinforce this wood frame with iron braces which frequently amounted to practically a solid metal frame. We must not forget that European chassis, even the largest and most costly ones, have a side frame section that is, in consideration of the length of the chassis, entirely too weak. This leads, inevitably, to distortion on the road, and these distortions are transmitted to the body. These solidly reinforced all-weather bodies gave such good results that the better class of builders concluded that the same principle could be applied to closed bodies with equal advantage. In spite of the increase in weight, we consider this use of metal indispensable.

It is for these reasons that we attach so much importance to the study of body doors and believe that on this point a more rapid development has become necessary. In this connection, considering the present width of doors, certain builders have attempted to cast them in aluminum. The idea is not bad, but two difficulties immediately arise. On one hand, if the molds are held to close limits as to dimensions, it will be found that cast aluminum doors will differ appreciably in size owing to the extreme difficulty in foreseeing the exact amount of shrinkage in casting. The amount of shrinkage depends on many factors difficult to control. On the other hand, if it is attempted to cast doors of dimensions slightly larger than actually required, depending on bringing them down to the required dimensions by machining operations, the latter will be found to be so costly as to make the use of cast doors practically prohibitive.

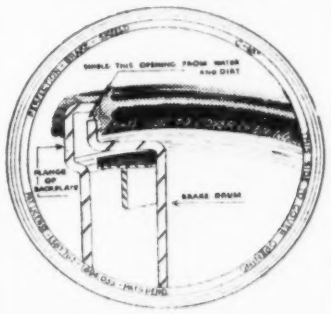
And, then, another point of capital importance is presented by the hinges. With the excessive weight of large doors, hinges were increased in size to a point where buyers began to manifest some uneasiness about their appearance, intimating that they spoiled the general appearance of the car. Various solutions were offered. First the number of hinges was increased, then they were strengthened without increasing their number. Some builders turned to the piano cover hinge and, finally, others proposed very large concealed hinges fixed to strong metal plates in the walls of the body. This last solution is tempting, on account of the clean appearance on the outside, which is so much desired, but such hinges call for special treatment, which, if not attained, makes their use impossible.

For these reasons, and after mature reflection, we propose sliding doors. This system has been employed on one occasion, following our instructions, but has not yet been sufficiently developed from an engineering standpoint. In the accompanying sketch—and let us point out in the beginning that we do not pretend to develop the practical details—we show only the aspect of such doors and their obvious advantages. These strike one as soon as the subject is considered: (1) Weight ceases to be of such great importance; (2) no necessity to hang the doors; (3) their width is limited only by the space they will occupy when opened; (4) door checks, which break so easily, are unnecessary; (5) impossibility of their catching on anything should they open while the car is in motion; (6) adjustment is more simple, simple.

According to our conception of this type of door, a light pressure on the outside should be sufficient to make it slide open silently toward the rear, and therefore a handle is required only on the inside. But,

(Continued on Page 12)

NEW GENERAL RUBBER BRAKE SHIELD IS GREASE PROOF

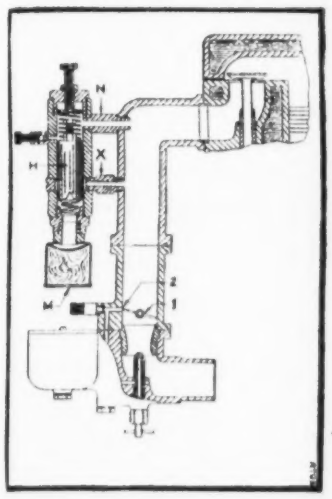


METHOD of installing Perfection brake shields

"Perfection" brake shields, made of rubber, and designed to make internal brakes dirt and water proof, have been started in production by the General Tire and Rubber Company, Akron, O. The rubber is compounded to withstand oil and grease.

They can be installed in thirty minutes on most cars and trucks having wire or disc wheels, and in ten minutes if done at the time brakes are relined.

NEW VALVE CONTROLS FUEL MIXTURE



MALLORY fuel-load control valve

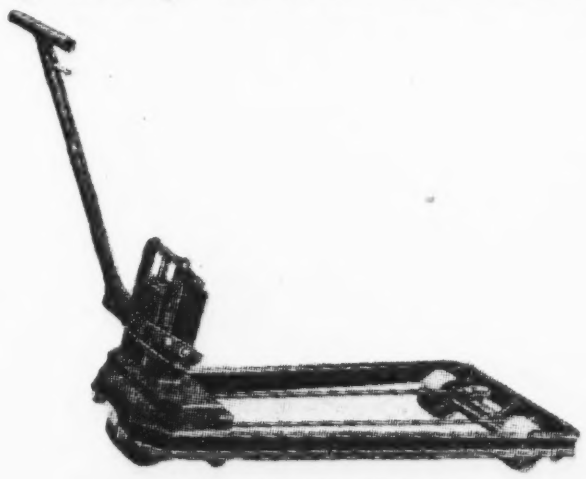
A fuel-load control valve, designed to automatically regulate the fuel mixture to suit variable speed operation in motor vehicles, has been introduced by the Mallory Electric Corporation, Toledo, O.

The valve is connected to the manifold in two places. The nipple (N) is screwed into the upper part of the valve and into the manifold. A connection is made, indicated at X, to the lower part of the valve and into the center of the manifold just above the carbureter throttle. The operation of the valve is as follows:

Assuming the engine is traveling at 25 m. p. h. and the throttle valve (1) is suddenly closed, the vacuum increase causes the piston (H) to raise, which permits air to flow through the air cleaner (M) into the valve and out through connection (X) into the manifold. This air by passing the idle jet (2) tends to reduce the vacuum and raise the compression in the engine. The added air to the rich idle gas makes a more combustible mixture, which gives the engine greater power when operating under a light load or on deceleration.

The fuel-load control valve will fit all engines except the model A Ford and other light four-cylinder engines. The price is $8.50

Lyon Hydraulic Lift Truck



LYON HYDRAULIC lift truck

A new hydraulic lift truck of 6,000 pounds capacity in two standard widths, a selection of standard lengths, lowered heights and wheel sizes besides a selection of optional dimensions has been introduced by the Lyon Iron Works, Greene, N. Y. Three and a half strokes are required to raise the truck vertically to its capacity height of three inches.

Divine canvas cushion wheels, Metzgar wood wheels, special aluminum wheels or other types may be furnished at extra charge if desired in place of the standard wheels. Wheels are roller bearing mounted.

HADEES METAL TIRE GUARD ANNOUNCED

A new metal tire guard, the Hadees, has been developed by the Liberty Foundries Company, Rockford, Ill. Features of the new cover are ease of installation and removal; a simple but effective locking device which is suitable for spare tires mounted at the rear or in fender wells.

The new covers are available in black or chrome finish. The chrome finished guard has black insert strips, while those finished in black have chromaloid molding inserts. Seven sizes cover the complete range of tires, the manufacturer states.

FITZGERALD ANNOUNCES GASKET BOARDS FOR FORD, CHEVROLET

Two new display board gasket assortments, one containing all gaskets required for the Model A Ford and the other those required for the Chevrolet six are announced by the Fitzgerald Manufacturing Company, Torrington, Conn.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Delivering Oils and Gasoline Profitably

With summer and its accompanying increase in demand for automobile lubricants and fuels well on its way, the following survey on "Delivering Oils and Gasoline Profitably," which was compiled by the General Motors Truck Company, Pontiac, Mich., should be of particular interest. The full text of the report covering the facts brought out during the survey is appearing serially in Automotive Daily News. The report in pamphlet form is also available at all General Motors Truck Company dealers and distributorships.

TIME saving is not an end in itself. It yields the truck operator consistent profits only when definite steps are taken to translate time savings into dollars and cents savings. It is true, however, that some savings will arise almost automatically from the fact that idle time and delays, of the kind discussed in the preceding pages, are eliminated. For example:

Systematic effort to reduce idle time in the shop will produce a direct saving in repair costs.

Time savings during peak, busy seasons will reduce the amount of costly overtime operation.

Time savings mean more prompt, efficient delivery of customer's orders.

But with the average distributor, who operates several trucks, time savings can be turned to even more valuable results than these, in two ways:

1. By increasing the work output of each truck operated and thereby making it possible to handle the same volume of sales with fewer trucks.

2. By using the extra truck time and capacity for sound sales expansion.

TO LOWER COSTS USING TIME SAVED

The first of these methods of making time savings pay profits is most practical in large fleet operations where the combined time savings of several trucks will make it possible to eliminate one or more trucks from the fleet. At first glance, it may seem highly improbable that such savings can be made. But a time saving of five minutes out of each hour for a fleet of twelve trucks means a total saving equivalent to the time of one truck, on the basis of a ten-hour working day. There were a few distributor operations observed during this survey in which such savings were not both possible and practical.

Time saved in the repair shop, moreover, means less demand for reserve truck equipment for emergency use when regular trucks are in the shop. And the reserve truck fleet, with its costly overhead and small actual earning time, is a part of the truck operation which should be closely pruned to a necessary minimum.

Obviously, savings from eliminating excess truck capacity, however, are more in the nature of limiting present volume and territorial coverage than they are constructive efforts to increase both volume and profits. The average operator can make far greater profits from time savings by following the second of the two steps listed above.

The operator who has extra truck time and capacity, through systematic time savings in his present truck operation, can make the greatest profitable gain by using time saved for profitable sales expansion. Using time saved for this purpose provides two profits:

1. Lowered cost of delivering his present volume, and

2. A clear profit on increased business handled with his present fleet.

USING TIME SAVED FOR PROFITABLE EXPANSION

Since time savings enable the distributor to deliver his present volume of business without working his trucks to full capacity, using the excess truck time for purposes of sales expansion is the soundest kind of sales development. In general, there are three ways in which this excess time can be used most profitably:

1. To deliver to new, profitable customers on present routes.

2. To expand present routes over larger areas.

3. To provide better service to profitable customers.

Whenever the distributor, through time savings, finds that his trucks can handle additional deliveries without demanding overtime work on the part of drivers, he should concentrate the effort of his sales force on territories served by the trucks in question, with a view to creating sufficient new business to absorb the excess time. If new customers are sold within the limits of present delivery routes, the only additional cost of serving those customers will be the sales expense involved. Deliveries, which are made on time which would otherwise be idle and which do not require additional truck mileage, may quite logically be called "costless deliveries."

Reaching Out for Greater Territory

Practically every distributor who keeps accurate delivery cost records has established a definite limit to his delivery area on the basis of the cost of delivery. Delivery costs can quickly eat up profits on long deliveries. Once the bulk station is located and built, therefore, the distributor is more or less limited to a fixed trading area which he can serve profitably.

The only way to enlarge this area and still maintain profitable deliveries is to increase the selling margin on his products or to lower the delivery cost

And since it is almost impossible for the average distributor to increase his margin in the face of competition, the only answer to wider territory coverage is lower delivery cost. Time savings which permit more deliveries to be made each working day will lower the cost of deliveries. And if new, profitable sales territories have opened up just beyond the limits of the distributor's profitable delivery area, time savings on his present trucks will oftentimes enable him to tap the new market with greater assurance of profitable sales.

Better Service Increases Orders

Time savings and consequent lower delivery costs can be turned to dollars and cents profits in still another way, by offering better service to profitable, worth-while prospects. The fact that truck time and capacity is available for special demands on delivery service will go far toward building and maintaining substantial and profitable relations with dealers. The dealer who demands an occasional rush delivery or more frequent deliveries at all times is little concerned with the fact that the distributor's trucks are not available to render the service demanded. His concern is to get the service he demands. Time savings which provide extra truck time and capacity to fulfill reasonable service demands of profitable customers are therefore a dollars-and-cents asset to the distributor, especially if his trade is largely made up of independent retailers.

Time savings are doubly profitable when lowered delivery cost and available truck time are used as a basis for sound sales expansion.

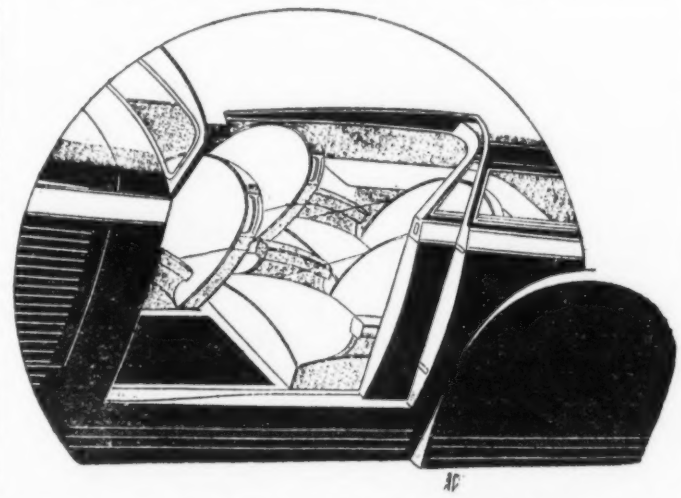
(TO BE CONTINUED.)

HOW TIME SAVINGS AFFECTED ONE OPERATOR

A large Western refiner, distributing from stations in ten districts, started a time saving study in January, 1930. The following is the amazing result of operating changes effected by June, 1930, in spite of slightly increased volume in 1930:

District Number	No. of Trucks Operated June, 1929	June, 1930	% Decrease Trucks Used	% Decrease Total Cost
1	41	15	63	68
2	91	82	10	13
3	51	32	39	38
4	123	82	33	34
5	111	77	31	36
6	30	30	..	..
7	98	61	38	39
8	20	10	50	55
9	47	29	38	41
10	40	30	25	28
Totals	652	448	31	35

Body Design Development



SKETCH showing sliding door, seat construction and arrangement

(Continued from Page 11)

and don't forget this, we only deliver the idea to technicians who but a pleasing and practical solution following our indications. With this should bring us, not their criticisms, type of construction we would have only one door on either side of the car and this, even if it should not entirely disappear when open, should, nevertheless, leave a passage wide enough to permit of easy entrance and exist.

It will be noticed that in our sketch the door opening is carried up into the roof of the body to eliminate the possibility of bumping one's head in getting into very low cars.

On the other hand, with such a very low hung chassis, running boards become quite superfluous, it being easy even for a woman to get into or out of the car without a running board to step on.

From the point of view of the conception of our design, we call attention to the fact, previously noted, that extra high-speed cars become most unstable at the rear end when traveling extremely fast. Let us not forget that racing cars of today are so tapered and lightened in the rear that they present no resisting surface whatever to the surrounding air. Basing his action on these facts and experiences, a famous English racing driver, holder of world speed records, placed longitudinally on the top of the rear part of the body a sort of rudder like a fish fin or the stabilizer of an airplane. This flat vertical member was expected to prevent the tail of his car from lateral displacement. Tests conclusively proved the soundness of his theory, and he may be congratulated on having thought of this device.

In taking our inspiration for the "automobile of the future" from the racing cars, it is natural for us to expect the same difficulties in the case of any car, propelled by a powerful turbine, which should obtain a speed of 300 to 400 kilometers an hour (180 to 240 miles). Take into consideration that these lateral displacements were found in a car that was pushed by its rear wheels, whereas ours is pulled by its front wheels. It would consequently have much less weight in the rear and would be disposed to "dance" at the slightest occasion. We therefore incorporate this stabilizer in our project and, having given it a form in harmony with the rest of the body, we feel that this appendix does not in any way impair the effect of the whole.

As concerns the front fenders, or mud guards, the type that are bolted to the brake support rapidly work loose and present a disagreeable appearance as they follow, an instant later, the vertical movements of the wheels on a slightly uneven road.

Another objection, put forward by some builders, is that the bolt holes in the support weaken it to such an extent as to make this type of mounting inadvisable. For these reasons we have preferred to give these fenders the form of the wheel and attach them, in adition to the inside, to the outside of the wheel. This is accomplished by means of a collar, mounted on ball bearings just outside the hub cap. The straight bottom edge of the semicircular outside half of the mud guard rests on the collar and the wheel turns within it.

As regards the interior of the car, the seats made of pneumatic cushions are entirely independent of the body structure, being attached by springs. Air cushions which have the defect of giving a "floating" sensation when they are placed on fixed seats are all that could be desired when used in connection with seats that are mounted on springs, as the "floating" is entirely absorbed by the springs, which form the only connection between the seats and the frame or floor of the car. Furthermore, these pneumatic seats have the great advantage of giving perfect comfort with only six inches of thickness. In this sketch will be noted also that the arms of the seats have a somewhat peculiar form. We picked this design from a Breguet aeroplane in the course of a long trip when we were much impressed by the special suitability of their form. It is equally true whether in an aeroplane or an automobile that one is obliged to change his position, shift in his seat, in the course of a long trip. Particularly is this true with the individual seats found in present-day aeroplanes and automobiles. One has a desire to sit sideways. In a great many aeroplanes one finds insufficient room for the knees and the sharp sides of wicker seats or an arm rest too close to the side of a car become most uncomfortable. With the form of the Breguet arm rests these inconveniences are entirely eliminated and comfort is had in all sorts of positions. A thin wire, placed out of the range of the movement of the elbows, is joined at the back of the seat to straps which permit adjustment of the inclination of the back.

***This is the second of a series of articles which will appear in the Automotive Daily News. The opinions expressed represent a study over a period of years by the author, in his association with Continental coach building, and were advanced by him abroad before coming to the United States. Some of the features described have been adopted by manufacturers here.**

STERNBERG TO MANAGE STERLING OF CALIFORNIA

Los Angeles, June 11.—William G. Sternberg has been appointed manager of the Sterling Motor Truck Company of California. Sternberg was one of the founders of the Sterling Motor Truck Company at Milwaukee. He was plant manager until 1920, when he was promoted to vice-president and general manager of the company's New York branch. He succeeds Harry Roosen, who has been promoted to manager of the company's Philadelphia branch.

TO RUN FOUR BUSES

Lincoln, Neb., June 11.—The Rapid Transit bus lines of Omaha, of which F. W. Smith is owner, will operate four buses between Omaha and Denver by way of Fremont, Schuyler, Columbus, Grand Island, Kearney and North Platte, Neb., and Sterling, Col. Service will be inaugurated this month.

SEIBERLING SAYS TIRE MAKING IS NOW PROFITLESS

(Continued from Page 1)

around forty-fourth to fiftieth among industries with deficits.

"There have been several causes for this deplorable situation. We rubber manufacturers have a habit of giving our tires away. If we can hang up a new tire production record, or build a new factory somewhere, it doesn't seem to matter much whether we make profits for our stockholders and take care of our employees and their families.

"But in looking a little deeper for the underlying cause of our trouble we find that year after year we are obliged to charge off huge inventory losses in raw materials, due to wide price fluctuations. If we analyze our balance sheets we see that in spite of all the unfair competitive trade practices which have crept into the industry had we not been obliged to take such devastating raw material losses the industry would have shown a fair record of earnings.

"And so we come to the conclusion that all our trade practices, which are in themselves deplorable, are really but futile attempts to offset a fundamentally unsound raw material position.

"Recently certain new processes have been worked out which are revolutionizing planting. Chief among these developments is the knowledge of how to propagate high-yielding trees, from which rubber can be produced at a much lower cost than we have ever anticipated. We have come to regard 400 pounds or 500 pounds per acre as a satisfactory yield for a plantation; yields of 1,500 pounds per acre are in sight and it seems possible that these may eventually be increased to 2,000 pounds and over. In this industry, as in all others, those who keep abreast of scientific developments will win out.

"The largest ownership in plantations and perhaps the one most highly developed is that of the United States Rubber Company in Sumatra and Malay, approximately 150,000 acres; the Goodyear Company in Sumatra, 100,000 acres; the Dunlop Company in Malaya, 90,000 acres; the Firestone Company recently started 40,000 acres in Liberia."

UNION PACIFIC STAGES GETS PICK-UP RIGHTS

Lincoln, Neb., June 11.—The Union Pacific Stages, Inc., subsidiary of the Union Pacific Railroad, has been granted authority by the State Railway Commission to operate a pick-up and delivery rail service between six major Nebraska points and more than a hundred smaller towns on the Union Pacific lines. The principle upon which the road will attempt to develop pick-up and delivery service by truck in local communities to co-ordinate with rail service is utterly different from the pick-up delivery service sought in previous applications to the Railway Commission. By use of a subsidiary organization, called a transport company, it is able to avoid part of the regulations which govern railroad rate structures.